PHARMACEUTICAL ABSTRACTS

EDITOR: A. G. DUMEZ, 32 S. Greene Street, Baltimore, Maryland.

ABSTRACTORS

CONTENTS

PHARMACY (*Continued*)

Pharmaceutical History

Garlic in Medicine—History of, with the Passage of Time. Fifty-four references.—Robert Drobnik. *Pharm. Monatsh.*, 19 (1938), 11–14. (H. M. B.)

Hermann Boerhaave. Biography.—W. Kirkby. *Chemist and Druggist*, 129 (1938), 109. (A. C. DeD.)

Linnaeus and the Linnaen Society. A brief summary of the life of Linnaeus is given. A few notes extracted from the "History of the Linnaen Society of London" are also included.—D. Hooper. *Chemist and Druggist*, 128 (1938), 753. (A. C. DeD.)

Medicines—History of the Most Important. I. II. III. A review dealing with local anesthetics, analgesics and purgatives including the purgative drugs, phenolphthalein, cholin and its derivatives, and those drugs acting mechanically by swelling or by lubricating. Twenty references.—Anon. *Pharm. Monatsh.*, 19 (1938), 1–4, 29–32, 69–71. (H. M. B.)

Poisoning in the Middle Ages. A review.—E. J. Parry. *Chemist and Druggist*, 128 (1938), 746. (A. C. DeD.)

Pharmaceutical Legislation

Estonian Pharmacists—Minimum Equipment for. The author gives an inventory of the minimum equipment and apparatus that drug stores of Estonia must have. The decree was promulgated by the Department of Pharmacy of the government.—Oscar Loddy. *J. Am. Pharm. Assoc.*, 27 (1938), 235. (Z. M. C.)

Food and Drug Bill. An editorial.—*Ind. Eng. Chem.*, 30 (1938), 365. (E. G. V.)

Food and Drugs Law in U. S. A. The new Food and Drugs Act in America is a thorough revision of the old law and contains many rather drastic provisions designed for the better protection of consumers. Extension of the Act to apply similarly to cosmetics which are deemed adulterated if containing a poisonous or deleterious ingredient or packed under contaminating conditions, and misbranded if labeled falsely or misleadingly or without quantity statement is a very important feature. Special provisions for hair dyes and harmless coal tar colors are to be listed.—Anon. *Perfumery Essent. Oil Record*, 29 (1938), 258. (A. C. DeD.)

Food Hygiene and Prevention of Adulteration. The principles underlying the development of the control of hygienic quality and purity of foods in France are discussed.—M. Toubeau. *Lait*, 17 (1937), 801–805; through *J. Soc. Chem. Ind.*, 57 (1938), 317. (E. G. V.)

Pharmaceutical Economics

Hospital Pharmacy—Present Status of. The paper points out briefly what the colleges are doing, what the associations are doing, what recognition hospital pharmacy has received and makes suggestions for future activities. A brief summary is given for 48 colleges of the American Association of Colleges of Pharmacy. Seven did not reply to the request for information. The American College of Surgeons, the Catholic Hospital Association and the American Pharmaceutical Association have recognized the importance of hospital pharmacy. Notable recognition has come to a few individuals who have been in the work. The suggestions made are too important to be further condensed. An excellent bibliography is appended.—Edward Spease. *J. Am. Pharm. Assoc.*, 27 (1938), 241. (Z. M. C.)

Let's Not Mistake the Campus for the World. Brief reference is made to the beginnings of pharmaceutical education and beginning of the trend to eliminate apprenticeship. Colleges were strictly professional schools recognizing their obligations to the public while now some are obscure subdivisions of big universities. The four-year curriculum should not obscure obligation to public for professional training. One of the most important objectives of a curriculum is "to furnish the student with that basic training which will enable him to render intelligent and constructive pharmaceutical service in the community in which he practices his profession. This service may be outlined as follows: Having available in every community an adequate supply of high-standard drugs and medicines. Having available the knowledge, skill and equipment necessary for the extemporaneous preparation of medicines prescribed by the medical profession. Having available the knowledge of the drugs and medicines distributed so that through proper advice the dangers of misuse of these may be averted. Having available accurate and reliable in-

formation about public health. Participating in research so that new or improved medicinal agents may be available to the medical profession." A curriculum must "keep pace with the progress and practice of the craft."—H. C. NEWTON. *J. Am. Pharm. Assoc.*, 27 (1938), 239. (Z. M.C.)

Medicinal and Pharmaceutical Preparation Industry in Canada. Data is given for output, investments, etc., of the industry.—ANON. *Chemistry and Industry*, 57 (1938), 297. (E. G. V.)

Pharmacist—Value of the, to the Hospital. The author points out some of the duties of the pharmacist in a hospital and the possibilities of development of the department.—OLIVER W. YOUNG. *J. Am. Pharm. Assoc.*, 27 (1938), 225. (Z. M. C.)

MISCELLANEOUS

Antiseptics. IV. Alkyl Catechols. Alkyl catechols are prepared in two ways. (1) Guaiacol is converted into the ester by treating it with one equivalent of the fatty acid and 1.1 equivalent of thionyl chloride. By treating the ester with aluminum chloride the 4-acyl catechol is formed through simultaneous Fries rearrangement and dimethylation. The acyl catechol is converted to the corresponding alkyl catechol either by the Clemmensen reduction, or by reduction with palladium catalyst. (2) The acyl catechols are also made by treating the fatty acid with thionyl chloride, and adding the crude acid chloride to a suspension of aluminum chloride in a solution of catechol in carbon disulfide. Tables of physical constants of the compounds prepared are included. Phenol coefficients given are: *n*-butyl catechol-29; *n*-hexyl catechol-129; and *n*-heptyl catechol-177.—ELLIS MILLER, WALTER H. HARTUNG, HENRY J. ROCK and FRANK S. CROSSLEY. *J. Am. Chem. Soc.*, 60 (1938), 7. (E. B. S.)

Ants—Household, Control of. When destruction of the nest is impossible, thallous sulfate-syrup bait successfully controlled *Monomorium pharaonis* and *Acanthomyops niger*, L.—H. W. THOMPSON and L. R. JOHNSON. *Bull. Entomol. Research*, 27 (1936), 393–397; through *J. Soc. Chem. Ind.*, 57 (1938), 323. (E. G. V.)

Chemicals—Aromatic, New Swiss. During recent years Switzerland has risen to a position of primary importance in the production of aromatic chemicals. The most recent important achievement, in synthetic perfumery is undoubtedly Parmantheme. This product is understood to be based on recent research on the natural perfume of the sweet violet. It exhales a violet odor, unusually realistic and very powerful. Other perfumes of recent note include Wardia C, Citrophore 2575, Allegial, Allo-Jasmin 646, Fraise 641 and Genet 679.—ANON. *Pharm. J.*, 140 (1938), 320. (W. B. B.)

Copper Fungicide Suitable for Use on Plants. Sodium carbonate is combined with an intermediate reaction product which results from the reaction of copper sulfate with less than an equimolecular proportion of calcium hydroxide (suitably at a temperature of about 70° C.), the final product being a neutral and stable fungicide.—FRANK J. SEIBERT, assignor to CHIPMAN CHEMICAL CO. U. S. pat. 2,109,683, March 1, 1938. (A. P.-C.)

Cosmetic Products—Vitamin-Containing. Mouth-wash containing water, ethyl alcohol, glycerol, benzoic acid, peppermint oil and ascorbic acid retains its vitamin activity for a number of weeks, on condition that it was stored at low temperature and that pure reagents were used. Carotene contained in ointments retains its activity for at least seven months, provided that it was stored at low temperature and light was excluded. The therapeutic value of the above preparations is confirmed.—A. I. NAIMARK. *Maslob. Zhir. Delo*, No. 5 (1937), 30–31; through *J. Soc. Chem. Ind.*, 57 (1938), 229. (E. G. V.)

Cresols—Amyl, Halogen Derivatives of. Monochloro, dichloro, monobromo and dibromo derivatives of amyl *o*-, *m*- and *p*-cresols, which are strongly germicidal, are prepared by chlorination or bromination of the amyl cresols, and are colorless or amber oily compounds. Various details of their manufacture and properties are given.—GEO. W. RAIZISS and LEROY W. CLEMENCE, assignors to ABBOTT LABORATORIES. U. S. pat. 2,102,854, Dec. 21, 1937.

Detergents—Newer. The manufacture, properties and uses of the sulfated fatty alcohols are discussed.—C. E. MULLIN. *Soap*, 13 (1937), 27–30, 73–74; No. 12; through *J. Soc. Chem. Ind.*, 57 (1938), 184. (E. G. V.)

Detergents and Wetting Agents—Sulfonated Oils as. Some of the disadvantages of soap as a detergent are pointed out. The difficulties encountered in the use of soap are said to be overcome by the use of sulfonated oils as wetting agents. Sulfonated castor oil contains the sulfuric

acid group as well as the sulfonic acid group. The sulfonated compound most commonly used as a substitute for soap is sodium lauryl sulfate, also known as "sulfonated lorol." There are many other closely related compounds of this type. All these compounds are white powders which are soluble in water. They have good detergent properties either in neutral, slightly acid or alkaline solution, but they have not the smooth lubricating "feel" so characteristic of soap-suds. They are particularly useful for washing materials which are harmed by an alkaline medium. They do not form objectionable precipitates of calcium or magnesium salts with hard water, and therefore have some advantages over soap for washing silk or wool and especially in cleansing them before dyeing. Among the numerous other synthetic wetting agents containing sulfonic groups may be mentioned the complex "Igepons," of which the following are examples: Igepon A($CH_3(CH_2)_7CH$:-$CH(CH_2)_7.COOCH_2CH_2SO_3Na$) and Igepon B($CH_3(CH_2)_7CH$:$CH(CH_2)_7CON(CH_3).CH_2CH_2$-$SO_3Na$). Examples are given of formulæ containing sulfonated oils as wetting agents in permanent waving lotions and soapless shampoos.—N. EVERS. *Pharm. J.*, 140 (1938), 326. (W. B. B.)

1-2-3 Enema—Modified. Magnesium sulfate, 1 ounce, glycerin, 2 ounces and water, 3 ounces make this enema. With recent advance in price of glycerin, it became advantageous to find a substitute. Mucilage of tragacanth has been tried. Ten grams of tragacanth and 1200 cc. of distilled water were used. This modified enema was used in twenty cases; thirteen showed excellent results, six fair and one poor.—RAYMOND J. HANSEN. *J. Am. Pharm. Assoc.*, 27 (1938), 227. (Z. M. C.)

Flavoring Essences. The appearance of essences from rare fruits (avocado, passion, mulberry and quince) is recorded. Improvements in pineapple and pear flavors and the use of flavors in medicine are described.—H. S. REDGROVE. *Food Manuf.*, 13 (1938), No. 1, 10–11; through *J. Soc. Chem. Ind.*, 57 (1938), 220. (E. G. V.)

Formulæ from Abroad. Formulæ bearing the following titles are listed: Sheffield Tooth Paste, Disinfectant Spray for Classrooms, Malgache Tea, Sedative Cachets, Compound Chloramine Powder.—ANON. *Pharm. J.*, 140 (1938), 297. (W. B. B.)

Germicidal Filters. Metal (gold, silver and/or copper) is deposited in the earlier layers only of the clay, infusorial earth, charcoal or other filter medium, which is preferably in candle form.—J. P. WELKER. Brit. pat. 475,087; through *J. Soc. Chem. Ind.*, 57 (1938), 233. (E. G. V.)

Germicidal Preparations. Mercuriaryl borates are claimed as potent germicides of low toxicity. Examples illustrate the union of HgPhOH with various boric acids in different proportions in water and ethyl alcohol to give compounds of various properties. $(HgPh)_2$ pyro-, meta- and ortho-borate and $(HgPh)_3$ borate are described. Melting points are indefinite.—C. N. ANDERSON. U. S. pat. 2,065,849; through *J. Soc. Chem. Ind.*, 57 (1938), 234. (E. G. V.)

Hair Treatment Preparations. Notes on hair tonics and conditioners, dandruff and alopeica remedies and the newer hairdressing preparations are discussed.—S. P. JANNAWAY. *Perfumery Essent. Oil Record*, 29 (1938), 220, 267. (A. C. DeD.)

Insecticide. Insecticides suitable for combating flies, roaches, etc., contain in solution an organic compound such as dibenzoylmethane or compounds which include the tautomeric grouping —CO—CH_2—CO⇌CO—CH=C(OH)—.—LOWELL B. KILGORE, assignor to KILGORE DEVELOPMENT CORP. U. S. pat. 2,107,298, Feb. 8, 1938. (A. P.-C.)

Insecticides—Potential New. Among numerous organic compounds tested against codling-moth larvæ, nitro-iodo-benzene, thiocoumarin and phenthioxin showed high initial toxicity, but lost efficiency fairly rapidly when exposed as spray deposits.—L. E. SMITH, E. H. SEIGLER and F. MUNGER. *J. Econ. Entomol.*, 29 (1936), 1027; through *J. Soc. Chem. Ind.*, 57 (1938), 207. (E. G. V.)

Larvicides—an Inexpensive Apparatus for Mixing. An apparatus is described which was devised for the purpose of mixing the ingredients of a pyrethrum oil larvicide which was being used in certain cases where for some reason it was not possible to apply oil or Paris green. It was not suitable for general use owing to the rapid deterioration of its larvicidal properties. It is thought that the apparatus may also be found useful for other larvicides which require thorough mixing.—N. M. BUTT. *J. Malaria Inst. India*, 1 (1938), 147. (A. C. DeD.)

Methallyl Chloride as an Insecticide. The author has investigated the properties of methallyl chloride (CH_2=C(CH_3)CH_2Cl) in killing insects in stored products. The corn weevil

(*Calandra granaria*, L.) was killed by a concentration of 18.75 Gm. per cubic meter applied for 24 hours at 18° C. The insects were not dead on fumigation, but the compound proved to have a strong after effect so that all the insects were killed within a few days. Eggs, pupæ and larvæ were also destroyed, while imagines of Calandra placed in the center of a bag of wheat were easily reached and killed by the gas. Five kilograms of methallyl chloride (evaporated in a gas chamber of 70 cubic meters capacity) sufficed to exterminate Calandra in wheat and maize, *Ephestra elutella*, Hb. and *Paralispa gularis*, Z. in cases of currants and apricots. Tens of thousands of cocoa moths with (*Ephestra elutella*) in a cocoa storage loft were killed by the same treatment. The great majority of plants are not damaged when methallyl chloride is used as a soil insecticide. The larvæ of the cockchafer were killed by a dose of 25 Gm. per square meter distributed in four holes. Methallyl chloride is manufactured from petroleum hydrocarbons. It is a colorless liquid with a specific gravity of 0.925 at 20° C. and a boiling point of 72° C. Evaporation takes place readily at ordinary temperatures.—C. J. BRIEJER. *Nature*, No. 3581, page 1099; through *Chemist and Druggist*, 129 (1938), 15. (A. C. DeD.)

Mosquito Larvicides—Mineral Oils as. The efficiency of oils depends largely on their ability to penetrate the trachea, best results being obtained with medium-boiling fractions. The actual boiling point range giving highest per cent kill varies with the oil source.—D. R. P. MURRAY. *Bull. Entomol. Research*, 27 (1936), 289–305; through *J. Soc. Chem. Ind.*, 57 (1938), 323. (E. G. V.)

Perfumes—Oriental. A discussion.—ANON. *Riechstoff-Ind. Kosmetik*, 13 (1938), 47–49. (H. M. B.)

Physics of Odor—Contribution to. A review of the experiments of H. Divaux.—L. TRABAUD. *Riechstoff-Ind. Kosmetik*, 13 (1938), 73–76. (H. M. B.)

Pollen Allergens. Pollen allergens, pollen antigens or pollen extracts are solutions obtained by extracting the dried pollens of plants, and are used for the diagnosis and treatment of hay fever or pollenosis. The plants which are chiefly responsible for producing hay fever are those with flowers which are adapted for wind pollination. From calculations made from pollen counts of the air, the average person inhales from 8 to about 1000 grains during twenty-four hours. For convenience the hay fever-producing plants are classified under three groups: (1) trees; (2) grasses; (3) weeds. In Great Britain, the grasses are the most important group of plants in producing hay fever. There are several methods in use for the preparation of pollen extracts. Each method involves the preliminary grinding of the pollen in order to break the cell membranes, and is followed by maceration in suitable extracting fluids. The final step in each method involves the filtration and sterilization of the extract, and in some cases the addition of phenol as a preservative. There are several methods by which pollen extracts may be standardized.—J. J. BLACKIE. *Pharm. J.*, 140 (1938), 355. (W. B. B.)

Pyrethrin Insecticide—Manufacture of. Extracting pyrethrum flowers with kerosene (0.1–2.5 gallons/pound) for 20–30 minutes gives more active extracts than does extraction for longer times, owing to non-dissolution of other soluble material which lowers the insecticidal action of the pyrethrins.—I. E. MUSKAT. U. S. pat. 2,066,737; through *J. Soc. Chem. Ind.*, 57 (1938), 310. (E. G. V.)

Raw Materials in Lipsticks. The value of castor oil, butylstearate, sesame and olive oils, lard, lanolin, beeswax, spermaceti, carnauba wax, hydrogenated oils and the effects of the bromo acids are discussed.—H. HILFER. *Drug and Cosmetic Ind.*, 42 (1938), 446–447, 450. (H. M. B.)

Soap Powder—Production of. A Lever patent describes a process producing a soap powder from soap having at least the moisture content of kettle soap, *i. e.*, about 30%, which comprises reducing the moisture content of the soap to a predetermined degree substantially lower than the original moisture, converting the partially dried soap into a plastic or semi-fluid mass, disintegrating the soap mass into discrete particles and solidifying the particles.—BRITISH PATENT SPECIFICATION No. 486, 819. *Perfumery Essent. Oil Record*, 29 (1938), 283. (A. C. DeD.)

Soaps—Metallic. The preparation and properties of metallic soaps are discussed. Lead napthenate driers have better drying properties than linoleates, although their induction period is longer.—H. W. CHATFIELD. *Paint Manuf.*, 6 (1936), 70–72; through *J. Soc. Chem. Ind.*, 57 (1938), 404. (E. G. V.)

Solvents—Manufacture and Use of Industrial. A lecture.—T. H. DURRANS. *Paint Manuf.*, 7 (1937), 371–375, 390; through *J. Soc. Chem. Ind.*, 57 (1938), 251. (E. G. V.)

Toilet Preparations—Mechanical Technology of, with Special Reference to the Preparation of Creams and Salves. A lecture.—H. STUMGES. *Fette u. Seifen*, 44 (1937), 457–460; through *J. Soc. Chem. Ind.*, 57 (1938), 229. (E. G. V.)

Tooth Paste—Manufacture of. Sodium borate, water is incorporated at less than 45° (decomposition temperature) with a base consisting of liquid paraffin, a filler (colloidal kaolin, cresin), an emulsifying agent (a soap, sodium cetyl or lauryl sulfate), and preferably a higher (cetyl) alcohol and a flavoring agent. Examples of suitable compositions are claimed.—P. J. BREIVOGEL. Brit. pat. 476,582; through *J. Soc. Chem. Ind.*, 57 (1938), 234. (E. G. V.)

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY

Adonis Vernalis—Additional Observations on the Biological Assay of the Glucosides of. The rate of injection makes considerable difference in the results. Adonivernoside acts like digitalis, and adonidoside acts somewhat like ouabaine.—F. MERCIER and S. MACARY. *Compt. rend. soc. biol.*, 124 (1937), 745–748; through *Chimie & Industrie*, 39 (1938), 319–320. (A. P.-C.)

Adrenaline—Effect of, on Dogs' Hearts. Small doses of adrenaline, which have no effect on coronaries of normal heart, produce active dilatation in coronaries of hearts perfused with thyroxin.—F. HOFFMAN and S. MIDDLETON. *Rev. Med. Chile*, 44 (1936); through *Rev. sud.-americana endocrinol. inmunol. quimioterap.*, 21 (1938), 63. (G. S. G.)

Adrenaline—Effect of, on Isolated Toad Hearts. Toad hearts intoxicated by thyroxin are sensitive to adrenaline. Sensitivity produced by thyroid hormone is more marked in winter animals, or those maintained at low temperature. Summer toads or those at high temperature sensitized by thyroxin to adrenaline little more than normal toads. Due to greater secretion of thyroid in warmer months.—F. HOFFMAN and S. MIDDLETON. *Rev. Med. Chile*, 44 (1936); through *Rev. sud.-americana endocrinol. inmunol. quimioterap.*, 21 (1938), 63. (G. S. G.)

Adrenaline-Glycerin, Adrenaline-Gelatin, Adrenaline-Zinc-Gelatin—Action of. The author shows that the addition of glycerin, and gelatin to adrenaline, in the presence of zinc salts or not, notably attenuates the general phenomena and the action on the blood pressure.—G. CAIZZONE. *Biochim. terap. sper.*, 16 (1938), 171. (A. C. DeD.)

Androgenic Substances—Use of Castrated Mice for Testing. Full restoration of the seminal vesicles of the castrated mouse to the adult size was obtained in ten to eighteen days by the injection of testosterone propionate in oil solution. The accessory glands of the immature castrate are also stimulated by free testosterone, and to a lesser extent by *cis*-androstanediol, but not by *trans*-androstanediol. Administration of male hormones by the subcutaneous implantation of tablets of the solid substance is not as efficient in mice as in rats. On the basis of quantitative results mice are compared with rats as test animals for male hormones and it is concluded that for various reasons they are less satisfactory.—R. DEANESLY. *Quart. J. Pharm. Pharmacol.*, 11 (1938), 79–83. (S. W. G.)

Antiscorbutic Properties of the Methyl Ester of 2-Ketogluconic Acid. Physiological tests showed that this substance may be regarded as antiscorbutic.—E. M. BAMDAS, B. A. LAVROV, V. M. RODIONOV and N. S. IAROUSSOVA. *Voprosy Pitaniya*, 5 (1936), 63–66; through *Chimie & Industrie*, 38 (1937), 938. (A. P.-C.)

Arsenic and Antimony—Potency Test for Organic Compounds of. The following summary is given: A method of comparing the therapeutic potency of two samples of neoarsphenamine is described which involves less labor and which gives a more precise result than existing methods. In the simplest form of the test, 40 mice are infected by intraperitoneal injection of 0.5 cc. of a suspension of trypanosomes in citrate-saline containing 30,000 per cc. The standard neoarsphenamine is injected intravenously without delay in the doses 0.02 and 0.024 mg. per Gm., each dose being given to 10 mice; the unknown sample is similarly injected in the same doses and in the same number of mice. The mice are then examined daily for 6–8 days to determine when they die. The protective power of each dose can be expressed quantitatively by adding together the number of mice alive on each of the days, and the potency of the unknown can be compared with that of the standard. A similar method is described for comparing antimony compounds like stibamine glycoside. The mice are injected with a suspension containing 4000 trypanosomes per

cc., and are injected with the antimony solution on three successive days, the injections being given intraperitoneally and not intravenously. The most suitable doses of stibamine glycoside appear to be 0.1, 0.12 and 0.145 mg. per Gm. at each injection. The number of mice surviving on each day for six days after the last injection is then observed, and from these observations the potency of the unknown and standard preparations can be compared.—E. BÜLBRING and J. H. BURN. *Quart. J. Pharm. Pharmacol.*, 11 (1938), 67–78. (S. W. G.)

Benzedrine Sulfate—Intravenous, as an Antagonist to Intravenous Soluble Amytal. Benzedrine exerts an antagonistic effect on the hypnotic action of amytal.—EDWARD C. REIFENSTEIN, JR., and EUGENE DAVIDOFF. *Proc. Soc. Exptl. Biol. Med.*, 38 (1938), 181. (A. E. M.)

Cobra Venom—Titration and Dosage of. Cobra venom used for pain in cancer and arterial hypertension, by intramuscular injection. Dose fixed by biologic assay; toxic rat and physiologic hypotensive rabbit units, 0.00001 to 0.00002 Gm. of venom. Does not have cumulative action. Solution deteriorates in 6 to 8 months. For control of pain in cancer dose increases from 0.000005 to 0.00002 Gm., largest dose 0.00001 Gm. Fatal toxic doses for men vary from 0.0001 Gm. to 0.0015 Gm. Failure of largest dose shows refractory patient, treatment discontinued. Treatment controls pain in 70% of cases of cancer. Doses smaller in hypotension 0.00001 to 0.00002 Gm. In all cases watch dose carefully. Treatment incompatible with administration of iodine, gold or silver salts, and radioactive substances. Useful for pain in cancer, arterial hypertension, tabetic gastric crises, trigeminal neuralgia and epilepsy.—F. BAGNASCO, *et al. Semana médica*, 45 (1936), 33; through *J. Am. Med. Assoc.*, 110 (1938), 700. (G. S. G.)

Cymarin and Coumingine—Comparative Sensitivity of the Toad and the Frog to. Reference is made to previous reports of studies with the frog and the toad. Data presented now demonstrate the natural tolerance of the toad to cardiac drugs, irrespective of their origin, as compared with the frog. Minimal systolic doses of ouabain-Merck, coumingine hydrochloride and cymarin were determined on *Rana pipiens* and *Bufo valliceps*. It was found that the toad was 167 times less sensitive to cymarin and 58 times less sensitive to coumingine hydrochloride than the frog. The ratio of susceptibility of the frog and the toad is 1:77; 1:150 had been reported previously.—K. K. CHEN, CHESTER C. HARGREAVES and WILLIAM J. WINCHESTER. *J. Am. Pharm. Assoc.*, 27 (1938), 307. (Z. M. C.)

Diaminoacridine Chloromethylate—Neutral, Experimental Intoxication by. Intravenous injection of this compound into rabbits produces important lesions in the lungs, suprarenal glands and especially the liver and kidneys. There is also a marked atrophy of the bone marrow. These organic troubles are revealed by the appearance of a generalized increase of blood nitrogen, both ureic and polypeptidic, and by a very intense acute anemia. The elimination of this compound seems to rest essentially on the liver (more particularly the bile) and kidneys.—H. WAREMBOURG, J. DRIESSENS and G. LABRENNE. *Compt. rend. soc. biol.*, 123 (1936), 13–14; through *Chimie & Industrie*, 3 (1937), 737. (A. P.-C.)

Dibromocholesterol—Pharmacology of. After daily subcutaneous injection of rabbits with oil solutions of dibromocholesterol for 9 to 40 days, bromine was found in the subcutaneous tissue, blood, liver, kidney, striated muscles, lungs, heart, thyroid and adrenals, but never in the spleen. The quantity of bromine in the tissues and organs was greatest at the beginning of the treatment and decreased after it had proceeded for about 9 or 10 days. Bromine appeared in the brain only after the 30th day. The per cent of bromine found in the lungs, heart and thyroid was always smaller than in the subcutaneous tissue, liver and blood.—P. PIRRONE. *Arch. farmacol. sper.*, 62 (1936), 176–186; through *Chimie & Industrie*, 399 (1938), 318. (A. P.-C.)

Digitalis Assay by the Cat Method under "Sodium Amytal" Anesthesia. Reference is made to effect of the anesthetic on the cat unit as noted in previous reports. The present work used "Sodium Amytal" and "Seconal." Experimental work is reported in detail. The two barbituric acid derivatives were compared with ether and the results are tabulated and discussed. It was found that it required more digitalis to kill the cats than when they were anesthetized with ether. It is evident the size of the cat unit varies with the anesthetic agent used.—WILLIAM E. FRY and EDWARD E. SWANSON. *J. Am. Pharm. Assoc.*, 27 (1938), 309. (Z. M. C.)

Digitalis—U. S. P. XI Standard for. Since the adoption of the International Digitalis Standard Powder for U. S. P. XI in place of the Ouabain used by U. S. P. IX and X much work has been done to determine just how much more active the present standard is than the former one and to determine the activity relationship between the International standard for tincture of

digitalis, the Canadian standard and the U. S. P. XI standard. The report includes tables comparing U. S. P. X Ouabain and U. S. P. XI Digitalis, an indirect comparison between U. S. P. X and XI standards for tincture of digitalis, comparison of four digitalis standards using one-hour frog method and also using lethal dose method. From four different angles experimental data indicate that the U. S. P. XI standard digitalis is more active than it is claimed to be, in reality about 50% stronger instead of 20 or 25% as was expected. It is apparently nearly 25% stronger than the International standard. The Canadian standard is slightly stronger than the International but less active than the U. S. P. XI. Comparable results were obtained by the one-hour and the twelve-hour frog methods for the activity relationship between any two of the standards.—L. W. ROSE and H. W. PFEIFLE. *J. Am. Pharm. Assoc.*, 27 (1938), 182. (Z. M. C.)

Diuretics. Renal stimulants are classified as circulatory stimulants (digitalis and squill), direct kidney stimulants (caffeine as citrated caffeine and the sodio-benzoate, theobromine sodio-salicylate and sodio-acetate, theocalcin, theophylline and its sodio-acetate, glucophylline and arbutin) and hydremic agents. The latter are divided as follows: (1) those which increase the aqueous content of the blood stream (water), (2) those functioning by the artificial excess concentration of blood colloids (salines as sodium and potassium acetates, potassium and lithium citrates) and (3) those which perform their mission by the avidity of plasma colloids for water (diuretic mercurials as salyrgan and novasural). The diuretic action of the concentrated juice of *Citrullus vulgaris* (watermelon) is mentioned.—L. STAMBOVSKY. *Drug and Cosmetic Ind.*, 42 (1938), 317–318. (H. M. B.)

Ephedrine—New Theory of. Ephedrine provides an example of the practical application of pharmacological discoveries in clinical medicine. Some new observations and a new theory explains some of the peculiarities of the action of ephedrine. Various workers have recently been drawing attention to an enzyme, known as amine oxidase, which destroys adrenalin and various other amines, by removing the nitrogen. It has been shown that ephedrine is not destroyed by this enzyme, but that in the presence of ephedrine the enzyme is prevented from destroying adrenalin. There is a good deal of evidence that some of the effects of ephedrine are due to this action. For example, low concentrations of ephedrine have been shown to increase the actions of adrenalin in much the same way as eserine increases the actions of acetylcholine. Now that the inhibition of amine oxidase by ephedrine *in vitro* has been shown, the evidence is as complete in the case of ephedrine as it is in the case of eserine. The possibility of other explanations must, however, be borne in mind.—J. H. GADDUM. *Pharm. J.*, 140 (1938), 271. (W. B. B.)

Gallic Acid—Pharmacology of. The immediate minimum lethal dose of gallic acid injected intravenously into rabbits was 3.232 Gm. per kilo body weight. The symptoms and lesions produced are described.—M. FILOMENI. *Arch. farmacol. sper.*, 63 (1937), 183–192; through *Chimie & Industrie*, 39 (1938), 121. (A. P.-C.)

Hydroxyphenylmethylaminoethanols—Effects of, on Water Diuresis. Adrenaline and its derivative *m*-hydroxyphenylmethylaminoethanol (*m*-synephrine or *m*-sympathol) in small doses increase water diuresis and in larger doses decrease it. *p*-Hydroxyphenylmethylaminoethanol (*p*-synephrine or *p*-sympathol) acts oppositely; in small doses it decreases diuresis and in larger doses increases it.—E. ZUNZ and T. SPARCHEZ. *Compt. rend. soc. biol.*, 124 (1937), 1257–1260; through *Chimie & Industrie*, 38 (1937), 736–737. (A. P.-C.)

Morphine—Intravenous. The author describes the intravenous administration of morphine sulfate, which has been extensively used at the Mayo Clinic as an adjunct to regional analgesia and in peroral endoscopy. The method may be used in any case in which rapid action is desired—for example, as a pre-anesthetic medication in emergencies. The amount used has varied from $1/24$ to $1/4$ grain: tablets of $1/6$ or $1/4$ grain may be dissolved in 1.5 or 2 cc. of sterile water, or ampuls of solution may be used. After about $1/24$ grain is injected a pause of thirty seconds allows one to judge the response and to note possible idiosyncrasy. The injection is then slowly continued until the desired result is obtained. The advantages of the intravenous route are that the full effect is at once attained, while the dose may be accurately controlled. The duration of the effect, in spite of its rapidity, is about the same as when the morphine is given hypodermically.—C. J. BETLACH. *Proc. Mayo Clin.* (Nov. 17, 1937), 733; through *Brit. Med. J.*, 4028 (1938), 660E. (W. H. H.)

Morphine Salts—Comparative Influence of Different, on the Local Anesthetic Action of Cocaine. The different morphine salts, in sterile saline solution corresponding to 4 mg. of mor-

phine per Kg. of animal, were injected intravenously into rabbits just when the corneal anesthesia produced by cocaine had worn off. The degree to which the anesthesia returned was noted in each case. Morphine phenylbutyrate, phenylpropionate and benzoate produced deeper anesthesia than the hydrochloride. Morphine tartrate produced an anesthesia similar in depth to that of the hydrochloride. Morphine gluconate and citrate did not give as strong a reaction as the hydrochloride. This follows the hypothesis that the entire molecule enters into the physiological action; inasmuch as the same quantity of morphine was used in each case.—J. REGNIER and S. LAMBIN. *J. pharm. chim.*, 25 (1937), 533–537. (S. W. G.)

Nicotine—Action of, upon the Blood Pressure in Rabbits. Nicotine was intravenously administered into normal rabbits, and rabbits indefinitely surviving removal of the suprarenals, and the coeliac and upper mesenteric ganglia, in doses of 0.5 mg. and 1 mg. per kilo of body weight with the mean blood pressure recording. The removal does not alter at all the magnitude of the pressure fall occurring immediately after the nicotine injection and that of the subsequent pressure elevation. Neither is the time when they occur altered.—M. TIBA. *Tôhoku J. Exptl. Med.*, 33 (1938), 213. (A. C. DeD.)

Oestrone—Estimation of. The method of estimating oestrus-producing hormone depending on the increase in the weight of the uterus which the hormone causes in ovarectomized rats has been tested and found to be a successful routine method for commercial use. Two typical commercial assays are described. The general method has been adapted for the assay of watery solutions of oestrus-producing hormone, and the technic is given as follows: Extract 1 cc. of the oily solution in a syringe with three 5-cc. portions of 97% alcohol, finally make up to 20 cc. with the alcohol. A 1:250 dilution of the original oily solution was made daily from the alcoholic stock solution. For the large dose inject 0.2 cc. daily, and dilute with an equal volume of saline for the small dose. From a stock solution of oestrone in alcohol containing 1000γ per cc., a fresh solution in normal saline may be prepared twice daily containing 1γ per cc. An injection of 0.2 cc. twice daily gives a dose of 0.4γ, and after dilution a daily dose of 0.2γ.—G. BROWNLEE. *Quart. J. Pharm. Pharmacol.*, 11 (1938), 11–17. (S. W. G.)

Panax Ginseng M.—Pharmacological Study of the Active Principle of the Leaves of. The leaves of *Panax ginseng* M. contain unidentified principles which are neither alkaloids nor glucosides, and the chief effect of which consists in a contraction of smooth muscles.—A. BORIANI. *Arch. farmacol. sper.*, 62 (1936), 53–69; through *Chimie & Industrie*, 39 (1938), 317–318. (A. P.-C.)

Picrotoxin—Quantitative Study of the Toxicity and Efficiency of. In recent years, it has been demonstrated that picrotoxin is an efficient respiratory stimulant and has a powerful analeptic action especially against barbiturate depression. The present report deals with the assay of picrotoxin solutions for toxicity and efficiency and gives some data about stability of the solutions. Rabbits were used as test animals. Experimental work reported in detail with tables and graphs covers toxicity, tolerance, testing for analeptic efficiency and stability of the solution. The M. L. D. for 50% of a large number of rabbits tested lies between 1.2 and 1.3 mg./Kg. Approximately 85% were killed by 1.5 mg./Kg. A curve shows abbreviation of a standard nembutal sleep by increasing doses of picrotoxin. This curve and the determination of toxicity represents a satisfactory method for assaying picrotoxin solutions. Very little or no tolerance seemed to develop from repeated administration. Solutions showed no deterioration in two years. Data regarding picrotoxinin are presented.—RICHARD KOHN. *J. Am. Pharm. Assoc.*, 27 (1938), 286. (Z. M. C.)

Prontosil—Effect of, on Blood Cells. Prontosil given to rabbits in a dosage of 0.25 Gm. per Kg. causes no numerical changes in the cellular elements of the blood in 21 days. Stippled erythrocytes and eosinophilic polymorphonuclears increase suggesting a mild bone marrow depression. The spleen is congested and the bone marrow shows augmentation of eosinophils.—WALTER B. KREUTZMANN and J. L. CARR. *Proc. Soc. Exptl. Biol. Med.*, 38 (1938), 19. (A. E. M.)

Sodium Tetrathionate—Pharmacological Activity of. Sodium tetrathionate is very toxic (0.22 to 0.34 Gm. per kilo of rabbit intravenously) when prepared by any method. The method of Sander produced the most toxic product (0.108 Gm. per kilo), probably because of its greater purity. All solutions on standing showed a decrease of pharmacological activity.—B. CACCIAVILLANI. *Arch. farmacol. sper.*, 63 (1937), 62–80; through *Chimie & Industrie*, 39 (1938), 117. (A. P.-C.)

Solanum Villosum—Phytochemical and Pharmacological Study of. Owing to reports that the plant is poisonous to animals phyto-chemical analysis and pharmacological tests were undertaken. The plant is described and a comprehensive description of *S. villosum*, Mill. and *S. nigrum* L. are printed in parallel columns for means of comparison. Experimental work is given in detail and the pharmacological studies are described. Attempts to isolate definite principles were not successful but a substance which gives promise of being composed in part of a toxic principle was obtained. The plant as a whole was found to be toxic in large amounts. The primary cause of death seemed to be failure of respiration. The substance obtained from the berries has properties attributed to sapo-toxins.—EARL PETER GUTH. *J. Am. Pharm. Assoc.*, 27 (1938), 217. (Z. M. C.)

Squill—Biological Standardization of. Four methods were investigated for the bio-assay of squill. Perfusion experiments on the guinea pig and rabbit, the action on the isolated heart of the snail and the emetic activity on the pigeon. Extracts of the drug were prepared by aqueous infusion and by extraction with 60% alcohol. It was found that the aqueous and alcoholic preparations possessed approximately equal activity when examined by the snail's heart method, but by the other three methods the aqueous extract was found to be the more active. Despite the diversity of the methods it was found that the activities, as shown by the four methods, were approximately the same. For a standard a sample of squill of a high degree of activity and a moisture content of 3.6% was chosen. When an extraction of 1 in 200 was prepared by double aqueous infusion, the mean minimum lethal dose, expressed in terms of the anhydrous powder, was found to be 28.3 mg. per Kg. of guinea pig and 17.2 mg. per Kg. of rabbit when tested by the perfusion method. The unit of activity was chosen as that equivalent to 0.05 Gm. of the standard. Commercial samples of squill assayed by this method showed a wide range of activity. The above standard was chosen in preference to scillarene as a means of the evaluation of squill and its preparations, as there is a striking difference in the behavior of the animals toward scillarene; while the rabbit is more sensitive than the guinea pig to an aqueous extract of the drug, the reverse is the case with scillarene. Of the perfusion methods, although the use of guinea pigs is more costly it is more sensitive; the method of determination of the emetic activity on the pigeon is more sensitive than the snail's heart method, but the time taken is considerably longer.—R. CAHEN and L. LAUNAY. *Bull. sci. pharmacol.*, 44 (1937), 257. (S. W. G.)

Statistical Methods—Application of, to Pharmaceutical Research. V. How Many Are Enough? The author submits a mathematical formula for the determination of the number of animals necessary to produce a specified degree of assurance that a particular difference in experimental results is statistically significant.—JAMES C. MUNCH. *J. Am. Pharm. Assoc.*, 27 (1938), 404. (Z. M. C.)

Stimulants. Various types are discussed. Nine references.—M. A. LESSER. *Drug and Cosmetic Ind.*, 42 (1938), 587–589, 593. (H. M. B.)

Theophylline Isopropanolamine—Effect of, on the Blood Pressure in Hypertension. A preliminary pharmacological report is given concerning the toxicity of both the 25 and 2.5% solutions of Theophylline Isopropanolamine. Clinical reports are given indicating that this preparation causes a slow but progressive drop in both systolic and diastolic levels with an increase in pulse pressure. On the whole, the effects were most pronounced on the systolic pressures. The preparation may be used both intravenously (2.5%) and intramuscularly (25%). In the absence of various control procedures, this new theophylline preparation is definitely difficult to evaluate. At the present time the study of the physiologic behavior as well as the pharmacodynamics of the base of this preparation, monoisopropanolamine, are in progress.—P. L. DAVIS, F. R. GREENBAUM and E. L. MAXWELL. *Clin. Med. Surg.*, 45 (1938), 157. (W. H. H.)

2,2,2-Trialkyl Ethanols—Synthesis and Pharmacological Action of Some. Since it had been found that 5-bromo-2-hydroxy and 5-ethyl-2-hydroxy benzyl alcohol possess local anesthetic value of the same relative order, it appeared that the relationship might exist between other series of halogen and alkyl substituted derivatives of the same parent substances. Four trialkyl ethanols were prepared and studied. The method of preparation is described and the pharmacological work also. All were found to possess anesthetic action but to a lesser degree than 2,2,2-tribromoethanol.—ROBB V. RICE, GLENN L. JENKINS and WILSON C. HARDEN. *J. Am. Pharm. Assoc.*, 27 (1938), 303. (Z. M. C.)

Viper Venom—Investigations on. At least 4 mg. of viper venom must be injected intravenously into a 2-kilo rabbit to produce death in about 10 hours; smaller doses produce only transitory accidents. Larger doses (8 to 10 mg.) cause death in less than 1 hour. The guinea pig is more sensitive than the rabbit to the intravenous injection of this venom; 0.4 mg. kills a 400-Gm. guinea pig in about 30 minutes. The venom of *Vipera lebetina* coagulates the plasmas of the horse, cow and sheep. The lysocithin produced by the venom in contact with horse serum hemolyzes the red corpuscles of the horse and cow. Anti-viper and anti-cobra serums neutralize the venom of *Vipera lebetina;* it is the anti-cobra (*Naja tripudians*) serum which is the most active.—E. CESARI and P. BOQUET. *Compt. rend. soc. biol.*, 124 (1937), 335–337; through *Chimie & Industrie*, 39 (1938), 319. (A. P.-C.)

TOXICOLOGY

Alcoholism and Arsenic Poisoning. Analysis of the blood, muscle, liver, spleen, kidneys and brain of swine that had been given arsenic, and arsenic and alcohol, respectively, for 227 to 299 days, showed that up to 10 times more arsenic could be found in the organs of animals which had had alcohol than in those which had not had any. This is explained by a higher arsenic-retaining power in the alcoholized animals.—E. ZIMMERMANN and E. RESMY. *Arch. Gewerbepath.*, 7 (1936), 486–496; through *Chimie & Industrie*, 38 (1937), 687. (A. P.-C.)

Arsinic Acids of the Diphenylamine Series—Structure and Toxicity of. The toxicity of the arsinic acids of the diphenylamine series can be decreased by introduction of an OH, $NHCOCH_3$ or OR group into the ring which does not contain arsenic. It is the *m*-OH derivative which gives the greatest reduction in toxicity. The decrease in toxicity is due chiefly to the change in external field of the molecule produced by introduction of the OH or $NHCOCH_3$ group. The ionization of the OH and the lyotropic properties of this group are intensified in the case of the *m*-position.—W. A. ISMAILSKI and A. M. SIMONOW. *Bull. soc. chim. France*, 3 (1936), 1739–1753; through *Chimie & Industrie*, 39 (1938), 119. (A. P.-C.)

Barbituric Derivatives—Postmortem Study of the Transformation of, into Hydrocyanic Compounds. The organs of dogs killed by intoxication with veronal, luminal and prominal, respectively, and by strangulation, were examined for hydrocyanic acid derivatives. In no case were any found either in the fresh organs or in organs after putrefaction.—P. R. ORELLA. *Anales farm. bioquím. (Buenos Aires)*, 7 (1936), 87–96; through *Chimie & Industrie*, 39 (1938), 53. (A. P.-C.)

Benzedrine Sulfate Poisoning—a Case of. Report of a patient using benzedrine sulfate for depression, taking 140 mg. in one dose (14 tablets of 10 mg.). Comatose, then confused for two days, with convulsive attacks. Made complete recovery. Emphasis on danger of overdose of benzedrine, may be lethal in certain individuals. Also causes extreme vasoconstriction.—BENJAMIN APFELBERG. *J. Am. Med. Assoc.*, 110 (1938), 575. (G. S. G.)

Bismuth—Toxicology of. Bismuth preparations in aqueous and oily bases were injected into rabbits and the penetration into the different parts of the body determined by analysis. The liposoluble preparations were absorbed more rapidly than the suspensions of insoluble bismuth salts. The findings agree with those of Fabre and Picon (*J. pharm. chim.*, 8 (1928), 249, 297; 9 (1929), 97).—R. FABRE and A. OKAC. *J. pharm. chim.*, 26 (1937), 433–445. (S. W. G.)

Cobalt—Toxicology of. Cobalt chloride was administered to dogs by intramuscular and intravenous injection, as when given by mouth an excessive vomiting occurred. The cobalt was found chiefly in the kidney, liver and pancreas and to a much less extent in the brain; it was eliminated by the urine and bile. For the determination of the cobalt the organic matter was destroyed by Kahane's perchloric acid method. After removal of the excess of acid the residue was dissolved with 30 cc. of hot water, 20 cc. of 50% sodium nitrite solution and 2 cc. of acetic acid were added and the solution brought to a boil. The cobalt was precipitated as potassium cobaltinitrite by adding 25 cc. of 30% potassium nitrite solution to the boiling solution. The precipitate was collected, washed with saturated potassium sulfate solution, suspended in 200 cc. of water, and 50 cc. of $N/10$ permanganate and 35 cc. of a mixture of equal volumes of sulfuric acid and water were added. The mixture was heated on a water-bath for about forty minutes when the precipitate was dissolved, the solution was cooled, 2 Gm. of potassium iodide were added and the liberated iodine titrated with $N/10$ thiosulfate to determine the excess permanganate. Each cc. of $N/10$ permanganate is equivalent to 0.5361 mg. of cobalt. The experiments showed that

the toxicity of cobalt is slight, the symptoms resembled those of general metallic poisoning, except cardiac acceleration.—F. CAUJOLLE and S. LAFFITE. *J. pharm. chim.*, 25 (1937), 351. (S. W. G.)

Digitalis Glucosides—Toxicological Research of. The toxicology of the digitalis glucosides is more pronounced according to the Lafon method since more minor impurities are extracted and the results are more evident. The difference in the behavior of the Keller-Kiliani reaction with the various digitalis glucosides and with the extract of the cadaverous organs in putrefaction, in the presence and absence of the digitalis products is given. From the extract a substance is obtained which gives a rose-violet color with the Keller-Kiliani reagent. This coloration does not conform with that of the true digitalin.—F. MONFORTE and L. SCHIFANI. *Farm. ital.*, 15 (1937), 45. (A. C. DeD.)

Ergoapiol—Cerebral Damage in Case of Fatal Poisoning Due to. Report of case of fatal poisoning of woman taking 17 capsules of ergoapiol, a compound of ergot and apiol to induce abortion. Histologic picture of severe degeneration of brain cortex, indicating toxic encephalopathy. Apiol is a camphoraceous body derived from parsley, and is apparently responsible for damage to brain in this case. Is known to affect central nervous system.—KONSTANTIN LOWENBERG. *J. Am. Med. Assoc.*, 110 (1938), 573. (G. S. G.)

Gelsemicine, Aconitine and Pseudaconitine—Toxicity of. The toxicity of the alkaloids in the form of their halides has been compared, weight for weight, in mice, rats, guinea pigs and rabbits. The alkaloids were injected intravenously in mice, rats and rabbits, but subcutaneously in guinea pigs. The order of toxicity of the substances varies from one species to another. The results show that in mice, gelsemicine > aconitine > pseudaconitine; in rats, gelsemicine > pseudaconitine > aconitine; in rabbits, pseudaconitine > aconitine > gelsemicine; and in guinea pigs, pseudaconitine > aconitine > gelsemicine.—K. K. CHEN, R. C. ANDERSON and E. B. ROBBINS. *Quart. J. Pharm. Pharmacol.*, 11 (1938), 84–91. (S. W. G.)

Glycols and Their Use in Industry. The uses and toxicity of the glycols and their ethers and esters are reviewed.—R. G. HARRY. *Paint Manuf.*, 7 (1937), 378–380; through *J. Soc. Chem. Ind.*, 57 (1938), 251. (E. G. V.)

Intoxications by Mercury Compounds—Differentiation between. There is a distinction between chronic intoxication by mercury vapors and diseases of the excretory organs (mucosa of the mouth, kidneys, intestine) produced by mercury salts. The difference in action of the mercury is due to a difference in its state in the organism: whereas the mercury vapors remain for some time in the blood or in the organs in the form of atomic dispersion, the salts form complexes with the blood proteins.—I. GEL'MAN and G. DERVIZ. *Hig. Truda*, 14 (1936), No. 6, 13–18; through *Chimie & Industrie*, 39 (1938), 74. (A. P.-C.)

Naphtha—Heavy, for Bed Bug Disinfection. As isolation of infected property is not always possible, a suitable fumigant must be harmless to human beings, lethal to eggs of the bug in all concentrations used, cheap, readily available and easy to apply, readily removed by subsequent ventilation, and be incapable of causing damage to furniture, fittings, etc. Fortunately, the toxic properties of orthodichlorbenzene had been recognized, and its suggested use rejected. Washed heavy naphtha had been found to possess all the characteristics needed. The critical factor is the temperature necessary to secure a sufficient concentration of vapor, the percentage of this (vol./vol.) at 50°, 61°, 70° and 75° F., being 0.16, 0.21, 0.29 and 0.36, respectively. As laboratory experiments showed that a minimum lethal concentration of 0.15 was essential to procure the death of all specimens, it is recommended that actual disinfection should not be attempted unless the temperature could be maintained at 60° F. at least. Screens erected a few inches from the walls and bearing light cotton sheeting soaked with naphtha, replenished by an automatic device after several hours, had greatly improved the results obtainable.—*Chemical Trade Journal*, 102 (1938), 32; through *Pharm. J.*, 140 (1938), 211. (W. B. B.)

Potassium Cyanide—Effect of, on the Nervous System. Varying degrees of primary degeneration (determined by the Donaggio method) depending on the duration of intoxication with potassium cyanide were manifested in the brain of dogs.—P. JEDLOWSKI. *Boll. soc. ital. biol. sper.*, 12 (1937), 174–176; through *Chimie & Industrie*, 39 (1938), 117. (A. P.-C.)

Rhubarb Leaves—Danger in Eating. Since rhubarb stalks are used as food, trials were made of rhubarb leaves as substitute for other "greens." But high content of oxalic acid, much

more than in stalks, makes them unfit for food and fatal cases of poisoning have resulted after ingestion of leaves.—CURRENT COMMENT. *J. Am. Med. Assoc.*, 109 (1937), 960. (G. S. G.)

Torch Oil Dermatitis. Dermatitis occurring among machinists in steel mill. Work of greasing, cleaning and reassembling rolling mill equipment. Pieces cleaned with torch oil, a crude kerosene. Irritation begins in from six months to a year, affecting the hands. Eased by ointments or cold cream. Later pruritic vesicles appear. Aggravation greater in hot weather. Feet affected with interdigital epidermomycosis. Patch tests with grease and oil indicated torch oil as causative factor of dermatitis. Men affected by dermatitis also had interdigital epidermomycosis as predisposing factor for sensitivity. Therapeutic measures for epidermomycosis effective in the dermatitis.—ADOLPH G. KAMMER and RICHARD H. CALLAHAN. *J. Am. Med. Assoc.*, 109 (1937), 1511. (G. S. G.)

Trichloroethylene. An account of three fatal cases of trichloroethylene poisoning which occurred in a hide-degreasing plant, a shoe factory (cementing rubber soles) and a metal articles factory, respectively.—E. HOLSTEIN. *Zbl. Gewerbehyg.*, 24 (1937), No. 3, 49–54; through *Chimie & Industrie*, 38 (1937), 1101. (A. P.-C.)

Vitamin D—Influence of Dietary Calcium and Phosphorus upon Action of, in Experimental Lead Poisoning. The increase of lead in circulation as produced by vitamin D is counteracted by a diet containing high phosphorous and low calcium values. This may give an explanation for the beneficial effect of such diet in clinical lead poisoning.—ALBERT E. SOBEL, IRVING B. WEXLER, DAVID D. PETROVSKY and BENJAMIN KRAMER. *Proc. Soc. Exptl. Biol. Med.*, 38 (1938), 435. (A. E. M.)

Vitamin D—Influence of, in Experimental Lead Poisoning. Vitamin D causes a rise in the concentration of lead in the blood stream and in the bones of rats suffering from lead poisoning.—ALBERT E. SOBEL, OSCAR GAWRON and BENJAMIN KRAMER. *Proc. Soc. Exptl. Biol. Med.*, 38 (1938), 433. (A. E. M.)

THERAPEUTICS

Acetylcholine—Alleged Effect of, on Immobilized Joints. Neuburger and Scholl have recently reported that acetylcholine prevented the alkylosis and muscular atrophy normally resulting from immobilization of the hind-limb joints of rabbits. The experiments have been repeated, but no differences between the control and treated animals, as described by these authors, could be demonstrated.—A. M. HARVEY. *Brit. Med. J.*, 4032 (1938), 835. (W. H. H.)

Adrenalone and Dioxyphenylpropanolamine—Action of, on Water Diuresis. Adrenalone and dioxyphenylpropanolamine behave like adrenaline with respect to diuresis after the ingestion of water. By intramuscular route, small doses of these substances increase the urinary flow; larger doses, on the contrary, diminish it. Like adrenaline, the doses of dioxyphenylpropanolamine which augment the water diuresis, attenuates the rate of the gradual chloride fall and tends to exaggerate the rate of the urea fall which produces a normal state in the course of water diuresis. On the contrary, the doses of dioxyphenylpropanolamine which diminishes the quantity of urine accentuates the rate of fall of the chlorides and hinders the rate of fall of the urea. Adrenalone behaves like adrenaline for the content of the chlorides and urea of the urine, but only when the water diuresis is either clearly exaggerated or reduced in a very notable manner.—E. ZUNZ, T. SPARCHEZ and O. VESSELOVSKY. *Arch. intern. pharmacodynamie*, 58 (1938), 404. (W. H. H.)

Allantoin. The drug and its uses in the therapy of ulcers, slow healing wounds, etc., are reviewed. Twenty-one references are given.—M. A. LESSER. *Drug and Cosmetic Ind.*, 42 (1938), 451–453, 456, 469. (H. M. B.)

2-(*p*-Aminobenzenesulfonamido) Pyridine—Chemotherapy of, Against Pneumococcal and Other Infections. 2-(*p*-Aminobenzenesulfonamido) pyridine possesses great chemotherapeutic activity against pneumococci of several types, more especially Types I, VII and VIII, and also gives considerable protection against Types II, III and V. The variation in different strains of pneumococci as found by Rosenthal (1937) is apparent also from this report. Whereas most observers have found it easier to protect against Type III than Type I, the reverse has been the case in the present series of experiments. 2-(*p*-Aminobenzenesulfonamido) pyridine is chemotherapeutically active in experimental infections in mice against pneumococci of Types I, II, III, V, VII, VIII and especially against Types I, VII and VIII. It appears to exert a definite action on the capsule of the pneumococcus. It is as active as sulfanilamide against hemolytic strepto-

coccus and meningococcus. It has a low toxicity for animals and does not produce porphyrinuria in those tested.—L. E. H. WHITBY. *Lancet*, 234 (1938), 1210. (W. H. H.)

Arsenic—Intoxication Caused by. In addition to other symptoms there appear polynephritis, keratose and pigmentation of the skin. High arsenic content is found in the urine, skin sheddings, nails (especially the bonded portion) and the basal part of the hair. The arsenic is slowly eliminated over a long period of time.—L. VAN ITALLIE. *J. pharm. chim.*, 26 (1937), 289–292. (S. W. G.)

Ascorbic Acid in Bronchial Asthma. The investigations described have not shown ascorbic acid to be of any value in the treatment of bronchial asthma when given in comparatively large doses by injection or by mouth.—H. B. HUNT. *Brit. Med. J.*, 4030 (1938), 726. (W. H. H.)

Benzedrine in Cycloplegia. The authors describe the use of benzedrine sulfate in 1% aqueous solution as an adjuvant to cycloplegics. One application of the cycloplegic followed in two or three minutes by one drop of benzedrine on the cornea and in two minutes by another application of the cycloplegic is only inferior to repeated instillations of a cycloplegic, in the case of atropine by 0.23 D, and in the case of homatropine by 0.035 D. The benzedrine thus has a similar action to cocaine without any ill effect on the cornea, and might be used in conjunction with a weak mydriatic in cases of mydriatic irritation. Cycloplegia using benzedrine is more easily and rapidly overcome by eserine than an equivalent degree of cycloplegia obtained by cycloplegics alone.—S. J. BEACH and W. R. MCADAMS. *Am. J. Ophthalmol.* (Feb. 1938), 121; through *Brit. Med. J.*, 4039 (1938) 1248D (W. H. H.)

Benzyl Benzoate—Use of, in the Treatment of Itch. The use of benzyl benzoate in soap-containing lotions is discussed. The following formulas are being used: (1) Benzyl benzoate 30 Gm., 20 parts of black soap (dark soft soap) in 95% alcohol to 100 Gm. Thirty and 50% solutions of the soft soap are also used. (2) Benzyl benzoate 50 Gm., alcohol (90%) 50 Gm., soft soap 50 Gm. (3) Benzyl benzoate 25 Gm., sublimed sulfur 100 Gm., cresylol officinal 30 Gm., soft soap 100 Gm., lanolin (anhydrous) 45 Gm. and yellow vaseline 300 Gm. Directions for compounding are given.—M. PETGES. *Bull. trav. soc. pharm. Bordeaux*, 76 (1938), 78. (S. W. G.)

Blood Serum—Iodinated, Relief of Myxedema and Creatinism by. It is shown in three cases that a derivative of iodinated protein obtained entirely from extra-thyroidal sources exerts qualitatively the physiologic action of thyroid hormone in human myxedema.—J. LERMAN and W. T. SALTER. *Proc. Soc. Exptl. Biol. Med.*, 38 (1938), 94. (A. E. M.)

Carbon Dioxide. Carbon dioxide has come to be greatly overrated as a therapeutic agent. It is a drug which should be used with great caution and under direct observation of a physician. Contraindications for its clinical employment are cited.—RALPH M. WATERS. *Can. Med. Assoc. J.*, 38 (1938), 240; through *Chem. Abstr.*, 32 (1938), 3552. (F. J. S.)

Copper in Pulmonary Tuberculosis. The author records his observations on twenty cases of pulmomary tuberculosis in patients aged from 24 to 64 who were treated by weekly intravenous injections of 5 cc. of a double cyanide of copper and potassium. He found that favorable results were obtained in early cases and in those running a slow course. No symptoms of intolerance were observed in the form of digestive or renal disturbances or skin eruptions such as may occur in treatment by gold salts.—N. BONARRIGO. *Rass. Fisiopat. Clin. Ter.*, (Nov. 1937), 670; through *Brit. Med. J.*, 4032 (1938), 880B. (W. H. H.)

Corn Silk. The styles and stigmas of Brazilian *Zea mays* L. constitute a valuable diuretic; they are also used against obesity and can be smoked with or without tobacco. Analysis of fresh corn silk gave the following limiting values: fatty oils 1.85 to 2.55%, essential oil 0.08 to 0.12%, gummy substances 2.65 to 3.80%, resin 2.25 to 2.78%, alkaloid traces to 0.05%, glucosidal "bitter substance" 0.80 to 1.15%, saponins 2.25 to 3.18%, brown dyestuff 1.0 to 1.8%, tannins 11.6 to 13.2%, reducing sugar 3.55 to 4.15%, mineral substances 4.85 to 5.25%, and moisture 11 to 15%, in addition to crude fiber. The therapeutic action of corn-silk infusion is largely due to the gummy constituents.—F. W. FREISE. *Pharm. Zentralhalle*, 77 (1936), 616–617; through *Chimie & Industrie*, 38 (1937), 1137. (A. P.-C.)

Dihydrofolliculin Benzoate—Continued Injections of, in the Guinea Pig. The authors have found that uterine fibromas have developed in the female guinea pig by continued injections of dihydrofolliculin benzoate. The doses of folliculin are 1 mg. per week but the treatment has been prolonged in this case from four and one-half to seven months.—MORICARD and CAUCHOIX. *Presse méd.*, No. 37 (1938), 740. (W. H. H.)

Endocrine Treatment of Menopausal Phenomena. Use of endocrine preparations for relief of menopausal symptoms consists of capsules and compressed tablets for oral administration, and sterile ampuls of oil for hypodermic injection, theelin, theelol, emmenin, used with oil, lactose phenobarbitol, for controls. 200 cases studied over several months. Only 100 tabulated. Both mental and physical symptoms considered. Patients usually experienced relief of symptoms regardless of composition of daily medication. Menopause not entirely due to cessation of ovarian function, but part of ageing process of body. Value of therapy estimated on relief of pathologic symptoms, not on physiologic changes.—J. P. PRATT and W. L. THOMAS. *J. Am. Med. Assoc.*, 109 (1937), 1875. (G. S. G.)

Ergine—Action of, on Diuresis. Intramuscular injection of 0.01 to 0.12 mg. of ergine per kilo body weight into dogs produced irregular effects on urine flow; on the whole, medium doses (0.01 mg.) produced an increase, while larger or smaller doses produced a decrease. Ergine differs from ergotamine and other ergot alkaloids in that it tends to decrease the chloride content of the urine.—E. ZUNZ and OLGA VESSELOVSKY. *Compt. rend. soc. biol.*, 123 (1936), 116–118; through *Chimie & Industrie*, 38 (1937), 737. (A. P.-C.)

Furocain Hydrochloride—Local Anesthetic Action of. This compound is a white powder, easily soluble in water, and has a structural formula which may be regarded as a cocaine molecule in which the benzoyl radical has been replaced by furoyl. Its local anesthetic action was tested, both on the sciatic nerve of the pithed frog and on the rabbit's cornea. Solutions of 5, 10 and 50% concentration showed no action by the latter method; while in the former the effect of 0.1 to 5.0% solutions on the sensory nerve endings was equalled by that on the motor nerve endings, and was considerably less than that produced by similar concentrations of novocaine hydrochloride. The high toxicity of this compound toward mice further emphasizes its marked inferiority to cocaine and the results serve to illustrate the importance of the benzoyl portion of the cocaine molecule.—P. G. MENSCHAKOW. *Bull. Biol. Med. exp. U. S. S. R.*, 4 (1937), 269; through *Quart. J. Pharm. Pharmacol.*, 11 (1938), 140. (S. W. G.)

Glucose Tolerance and Lactate Utilization during Fever. The following summary is given: (1) Fever produced by the subcutaneous injection of *B. coli* vaccine lowered the tolerance for glucose in rabbits and rats. When the glucose was administered orally, the highest point of the blood sugar curve was much higher during fever than when the body temperature was normal. The return to the initial level, also, was slower. After intravenous administration the highest point of the blood sugar curve was again much greater during fever, but there was no delay in the return to the initial level. (2) In pyrexial rabbits and rats there was an impairment of the utilization of lactate as shown by the reduced capacity to form liver glycogen after the administration of sodium-*dl*-lactate. (3) The normal effect of insulin in producing a deposition of glycogen in the liver in young rabbits was suppressed during fever.—R. WIEN. *Quart. J. Pharm. Pharmacol.*, 11 (1938), 34–45. (S. W. G.)

Histidine and Histamine. The therapeutic values of these compounds are described. Thirty references are given.—M. A. LESSER. *Drug and Cosmetic Ind.*, 42 (1938), 310–311, 339. (H. M. B.)

Histidine Therapy—Clinical Investigation of, in Cases of Peptic Ulcer. Histidine therapy gives relief from peptic ulcer, but is followed by recurrences. Study made of ambulatory patients with duodenal ulcer. Twenty-five patients received 5 cc. histidine solution intramuscularly daily, and 25 received sterile water. Majority of each group obtained relief but half of each group had relapses within six months. Since there were slightly more cures on sterile water than histidine, it is concluded that histidine lacks specificity as cure for peptic ulcer.—ROY UPHAM and HARRY BAROWSKY. *J. Am. Med. Assoc.*, 109 (1937), 422. (G. S. G.)

Insulin Shock Therapy—Interruption of. Some schizophrenic patients receiving insulin shock therapy fail to rouse after shock and tube feeding of sucrose, require intravenous dextrose. If sucrose is warmed and diluted, more rapid absorption occurs, and patient awakens promptly.—ROBERT C. HUNT and HAROLD FELDMAN. *J. Am. Med. Assoc.*, 109 (1937), 1119. (G. S. G.)

2-Ketogluconic Acid Methyl Ether—Antiscorbutic Properties of. The methyl ether of 2-ketogluconic acid has been prepared in the Nutrition Institute of the U. S. S. R. and has been found to possess antiscorbutic properties, showing that open-chain derivatives may have the same therapeutic effect as cyclic compounds such as furan derivatives of the vitamin C type.—V. M.

RODIONOV. *Izv. Akad. Nauk U. S. S. R. (Sér. Chim.)*, (1936), No. 6, 923–927; through *Chimie & Industrie*, 38 (1937), 738–739. (A. P.-C.)

Left Ventricular Failure—Treatment of. Production of paroxysmal dispnea, may be complicated by hypertension. Morphine sulfate is most effective remedy. Intravenous administration of theophylline with ethylene diamine in dextrose solution is effective in abolishing attack. Digifoline or amorphous strophanthin in very small doses, added to the above solution, is efficacious, but inadvisable if digitalis therapy is in progress.—FRED M. SMITH. *J. Am. Med. Assoc.*, 109 (1937), 646. (G. S. G.)

Lobeline Sulfate—Pharmacology and Use of, in the Treatment of Tobacco Heart. Lobeline sulfate useful in breaking tobacco habit in cases of impaired circulation. Given orally in capsules of 0.008 Gm. ($^1/_8$ grain). One capsule taken every time desire for smoking is experienced. May produce nausea and anorexia. Early use of lobelia and its derivatives as emetic. In small doses is powerful respiratory stimulant, acting on autonomic ganglia. Strong initial pressor effect on circulation, with prolonged and dangerous fall below original levels. Injection causes rise in blood sugar, similar to nicotine; due to action on adrenal medulla, increasing output of epinephrine and converting glycogen into dextrose. Experiments on human subjects, 28 smokers, 5 non-smokers. Given lobeline sulfate in capsules. Limited to 18 per day. Four controls given capsules of magnesium oxide. Symptoms predominantly gastro intestinal. Control group had no symptoms. Vaso-constriction and drop in temperature noted; also rise in blood sugar. Conclude it is too toxic for continuous use as "cure" for tobacco habit.—IRVING S. WRIGHT and DAVID LITTAUER. *J. Am. Med. Assoc.*, 109 (1937), 649. (G. S. G.)

Maggots. The author presents a brief review of the history of the use of maggots (common house fly) for the healing of wounds. The maggots feed only on the decaying material without destroying the healthy tissue. They excrete a substance which promotes granulation and healing of the wound. One of the materials excreted has been identified as allantoin and is now being tried in the treatment of slow healing wounds.—O. A. ROTHENHEIM. *Schweiz. Apoth.-Ztg.*, 76 (1938), 73. (M. F. W. D.)

Mandelic Acid in the Treatment of Urinary B. Coli. Of the sixteen cases treated, ten were treated with ammonium mandelate and six with calcium mandelate. Fifteen of the cases showed good results while the other was disfavorable due to pyelonephritis with renal ptosis. The author values the derivatives of mandelic acid in rendering great service in the treatment of chronic *B. coli* urinary infections, the only contraindications being renal insufficient and pyelonephritis. The author has found that the rare incidents resulting from the administration of mandelic acid (nausea, renal irritation) are less frequent and less severe when the derivatives are used. He has found that calcium mandelate constitutes the product of choice of all the different derivatives.—L. CAPERAA. *Presse médicale*, No. 33 (1938), 638. (W. H. H.)

Menorrhagia and Metrorrhagia—Treatment by Endocrine Products. Functional uterine bleeding has no direct relationship to type of endometrium. Usually due to ovarian failure and traceable to some endocrine disturbance, usually pituitary, thyroid, ovary; frequently complicated by anemia, focal infections, nervous conditions. For treatment: (1) Accurate diagnosis is necessary. (2) Specific measures for existing endocrine lesions. Thyroid extract given if cause is hypothyroidism; gonadotropic extracts useful to stimulate ovary. Pituitary preparations usually more effective in conjunction with thyroid, and estrogen or a gonadotropic substance. (3) Eradicate factors contributing to primary disorder. (4) Realize that surgery and irradiation produce only symptomatic cure.—JOHN C. BURCH, *et al. J. Am. Med. Assoc.*, 109 (1937), 1869. (G. S. G.)

Mustard Gas. Mustard gas, or dichlorodiethyl sulfide is relatively easy to produce, requiring as raw materials chlorine, sulfur and alcohol, all of which are used extensively in industry. It is effective in extremely low concentration, and has a vesicant or skin blistering action, so that complete protection is not obtained, in the case of air raids, merely by the use of a mask. Mustard gas is insidious, producing no immediate symptoms, so that persons may become casualties without knowing they have been exposed to the gas. A system of first aid treatments is recommended by the author, to be used in the event of exposure to mustard gas during air raids.—G. H. GILL. *Pharm. J.*, 140 (1938), 291. (W. B. B.)

Novocaine and Heart Fibrillation. Ventricular fibrillation frequently occurs when adrenaline is given to a dog under light chloroform inhalation. Novocaine when given simultaneously

with adrenaline to dogs under light chloroform administration, protects against this type of ventricular fibrillation.—T. C. R. SHEN and M. A. SIMON. *Arch. intern. pharmacodynamie*, 59 (1938), 68. (W. H. H.)

Nutrition and Hematopoiesis—Relation between. Mainly a review of the work of Whipple and co-workers and of Castle and co-workers on the treatment of anemia with liver.—SUZANNE DEJUST. *2me Congr. Sci. Intern. Alimentation*, (1937), A71–83. (A. P.-C.)

Pituitary and Increased Intracranial Pressure. After being desiccated in acetone, 109 human pituitary glands were assayed individually on groups of immature rats for gonadotropic activity. Fifty-two of the glands were from patients with increased intracranial pressure due to cerebral tumors, while the remaining fifty-seven glands, from cases with normal intracranial pressure, served as controls. The activity of each gland was expressed as a percentage of that of a mixed sample of human pituitaries which was used as a standard preparation. The control series showed that the gonadotropic activity of the pituitary varies with age. During early childhood the amount of hormone in the gland is small, but it increases slowly to the end of the period of sexual activity. In women at the menopause there is a sudden rise in the activity of the pituitary, but in men a corresponding increase does not occur until about the seventieth year. The significance of this is briefly discussed. The amount of gonadotropic hormone in the pituitary of patients with increased intracranial pressure tends to be more variable than in normal subjects. Several of the women showed menstrual dysfunction and there was a suggestion of a premature rise in the amount of gonadotropic hormone in their pituitaries. There appears, however, to be no relation between gonadotropic activity and the duration of the increased pressure.—W. R. HENDERSON and I. W. ROWLANDS. *Brit. Med. J.*, 4037 (1938), 1094. (W. H. H.)

Prothrombin—Deficiency of, Bleeding Tendency of Obstructive Jaundice Due to, and Dietary Factors. The bleeding tendency in cases of obstructive jaundice and biliary fistula is due to prothrombin deficiency. With restoration of bile to the intestine the prothrombin gradually returns to normal and the bleeding ceases. Feeding of alfalfa extract, rich in vitamin K, in addition to bile, causes a more rapid return of the prothrombin to normal.—E. D. WARNER, K. M. BRINKHOUS and H. P. SMITH. *Proc. Soc. Exptl. Biol. Med.*, 37 (1938), 628. (A. E. M.)

Riboflavin—Pediculosis in Rats Kept on a Deficient Diet of. Chronic riboflavin deficiency in rats is often accompanied by pediculosis. This disease has never been observed in rats manifesting symptoms of a deficiency of other factors of the vitamin B_2 complex. Administration of riboflavin by mouth has a curative effect on this type of pediculosis in rats.—PAUL GYÖRGY. *Proc. Soc. Exptl. Biol. Med.*, 38 (1938), 383. (A. E. M.)

Skin Diseases—Occupational, Treatment and Prevention of, Especially in the Chemical Industry. Methods are recommended for the prevention and treatment of skin diseases caused by irritant chemicals.—W. MEYER. *Chem. Ztg.*, 61 (1937), 1009–1011; through *J. Soc. Chem. Ind.*, 57 (1938), 323. (E. G. V.)

Succinic Acid in Diabetic Acidosis. According to the author succinic acid was found by Baer and Blum in 1911 to diminish the excretion of acetone bodies in the urine in diabetes. Recent observations show that it is of importance in carbohydrate metabolism, in the fixation of hepatic glycogen and in anerobic cell metabolism. Three cases are described of diabetic acidosis resistant to sodium bicarbonate, carbohydrate and insulin treatment in which acetone bodies disappeared from the urine after the administration of 0.5 to 2 Gm. daily of succinic acid. There is a small coincident rise in the blood-sugar concentration, and succinic acid does not diminish the necessity for insulin. If the metabolic dysfunction responsible for the acidosis has been sufficiently protracted to do irreparable toxic injury to tissue cells succinic acid is without effect; hence it is suggested the negative results of English and Austrian investigators.—A. BROCKMÜLLER. *Münch. med. Wochschr.* (Feb. 18, 1938), 252; through *Brit. Med. J.*, 4035 (1938), 1036B. (W. H. H.)

Sulfanilamide in Meningitis. Ten children suffering from meningococcal meningitis have been treated with sulfanilamide. The cerebro-spinal fluid became sterile in all the cases. Four of the patients were less than a year old, and one of these died. All the six patients over a year old recovered.—T. CRAWFORD and G. B. FLEMING. *Lancet*, 234 (1938), 987. (W. H. H.)

Sulfanilamide in Meningococcal Meningitis. Twelve cases of meningococcal meningitis in children under four have been treated with intrathecal and intramuscular injections of 0.8% sulfanilamide solution. The amount injected into the spinal canal is from 5 to 30 cc., according

to the amount of spinal fluid withdrawn. The amount injected has been less than the amount withdrawn. The intramuscular doses have been from thirty-five to one hundred and fifty, according to the weight of the patients. In the series three have died (25%). The average fatality rate in this hospital for the last six years has been seventy % for children under four.—A. ELDAHL. *Lancet*, 234 (1938), 712. (W. H. H.)

Sulfanilamide—Observations on Mode of Action of. Differences of opinion as to mode of attack of sulfanilamide, whether bacteriostatic or phagocytic. Method used: mice inoculated with broth culture of streptococcus from heart's blood of mouse that had succumed to streptococcic infection. Peritoneal exudate obtained, films made and stained, capsules demonstrated and chocolate blood agar plates inoculated. Mouse virulence also obtained by inoculating peritoneum with exudate in broth. Little evidence that sulfanilamide is bacteriostatic *in vitro*, or that serums of patients treated with sulfanilamide are bacteriostatic *in vitro*. *In vivo*, sulfanilamide changed microörganisms, permitting them to be phagocytized by white blood cells, and also exhibits bacteriostatc action.—ELEANOR A. BLISS and PERRIN H. LONG. *J. Am. Med. Assoc.*, 109 (1937), 1524. (G. S. G.)

Sulfanilamide—Specific Febrile Reaction to. Report on series of 134 cases of various infections treated with sulfanilamide, of which 21 developed fever, between 4th and 13th day; 9 also developed a rash. Symptoms also accompanied by itching and malaise. Diagnoses included streptococcus, gonococcus and meningococcus. Course bore striking relation to serum sickness. Reaction continued after dosage was decreased and even discontinued. Suggests conversion of sulfanilamide to an antigenic form.—P. O. HAGEMAN and FRANCIS G. BLAKE. *J. Am. Med. Assoc.*, 109 (1937), 642. (G. S. G.)

Sulfanilamide—Treatment of Chancroid with. Ten cases of chancroid have been treated by sulfanilamide. A rapid cure was effected in all. Sulfanilamide does not interfere with Reenstierna's test. Four of the above cases had relapsed after treatment by Dmelcos vaccine intravenously. The good results of treatment appear to be permanent. This method of treatment is suitable for ambulatory patients and out-patients, but strict supervision is required when large doses are given.—R. C. L. BATCHELOR and R. LEES. *Brit. Med. J.*, 4037 (1938), 1100. (W. H. H.)

Sulfanilamide—Treatment of Spontaneous Canine Distemper with. Sulfanilamide and prontosil have been used successfully in the treatment of distemper in dogs. Both drugs seem to be equally effective.—PHILIP M. MARCUS and H. NECHELES. *Proc. Soc. Exptl. Biol. Med.*, 38 (1938), 385. (A. E. M.)

Testosterone Propionate and the Female. Metrorrhagia and menorrhagia can as a rule be controlled by injection of testosterone propionate in adequate doses. The amount required depends on the clinical findings and the pathology of the condition. A temporary therapeutic menopause with its associated symptoms, can be induced with large doses. Menstruation may be postponed for several months after treatment; ovulation and luteinization can be inhibited, and the endometrium is usually found to be in the resting stage. The breasts become smaller. Two cases have proved refractory to treatment, even with large doses of testosterone propionate. No harmful effect however has been noticed in sixteen patients treated during nine months with total doses up to 2200 mg.—G. L. FOSS. *Lancet*, 234 (1938), 992. (W. H. H.)

Theophylline—Action of, with Ethylenediamine. Theophylline with ethylenediamine has favorable influence of dyspnea on cardiac failure. Study of effect of intravenous administration on intrathecal and venous pressures and on bronchial obstruction. Drug injected and pressure recorded in glass manometer filled with sodium citrate 3%. Studies include observations on intrathecal pressure alone, on venous pressure alone, and on two simultaneously, on normal and cardiac patients. Studies of intravenous injection of theophylline with ethylenediamine on bronchial obstruction in patients with chronic pulmonary disease and with allergic asthma. Results show correlation between elevation of venous and intrathecal pressures in cardiac failure. Relief of dyspnea is related to decline in observed intrathecal and venous pressures following intravenous administration of theophylline with ethylenediamine. Combination has favorable action on bronchial obstruction in bronchial asthma and in cardiac failure.—JAMES A. GREENE, *et al.* *J. Am. Med. Assoc.*, 109 (1937), 1712. (G. S. G.)

Therapeutic Derivative of the Genus Lactuca and Process of Preparing Same. Lactuca latex is treated to break the emulsion to form a solid and a liquid component. The solid compon-

ent is removed, and water is removed from the liquid component to concentrate the therapeutically active ingredients it contains.—GERHARD SCHENCK, assignor to E. BILHUBER, INC. U. S. pat. 2,107,839, Feb. 8, 1938. (A. P.-C.)

Thyrotropic Hormone—Human. Antithyrotropic serum, prepared in rabbits against ox thyrotropic hormone, will antagonize the action of this hormone, but has a negligible inhibitory effect on the action of thyrotropic hormone obtained in a similar manner from human pituitary glands. Owing to this species specificity it seems unlikely that such serum will prove of therapeutic value in the human subject.—C. L. COPE. *Lancet*, 234 (1938), 888. (W. H. H.)

Tin Proteinate and Brewers' Yeast—Treatment of Skin Infections with Combined. A combination of dried brewers' yeast and tin proteinate was found to be useful in the treatment of acne vulgaris, acne rosacea and furunculosis. In acne vulgaris and acne rosacea this therapy is chiefly of value in cases presenting numerous deep-seated pustules and may be used as an adjunct to other therapeutic measures. The therapeutic results in furunculosis were most encouraging. In thirty-two of thirty-three cases of furunculosis no further outbreaks of lesions occurred after the administration of the combined tin and yeast therapy for a period of from two to six weeks. Tin proteinate was given in a dosage of from one to four grains three times daily and dried brewers' yeast in a dosage of four to sixteen grains three times daily smaller doses being administered to patients with acne vulgaris and larger doses to patients with furunculosis. No intolerance to this therapy was noted at any time.—C. S. WRIGHT. *Med. Record*, 147 (1938), 453. (W. H. H.)

Trichloroethylene in Angina. The authors report their results in the treatment of anginal syndromes by inhalations of trichloroethylene. Glass ampuls containing 1 cc. of the drug were broken in several layers of gauze and the vapor inhaled by the patient for exactly two minutes while in a recumbent position. This was done morning and evening for one week, then twice daily on alternate days during the second week, and from then on twice daily for two days each week. Forty cases were treated. The results were rather disappointing. In eighteen cases varying degrees of improvement occurred; only one patient obtained complete relief, but the others had fewer attacks which were less severe. In five cases there was temporary improvement and in thirteen cases no improvement was noted. Four patients died during the course of the treatments; two of them had temporarily improved. The authors consider that this method should be given a trial when other measures have failed. According to them the drug is well tolerated, and its administration appears to be perfectly safe.—F. A. WILLIUS and T. J. DRY. *Amer. Heart J.* (Dec. 1937), 659; through *Brit. Med. J.*, 4034 (1938), 988B. (W. H. H.)

Tulip Dye Extract—Effect of, in Pneumococcic Infection. Tulip dye is not only without untoward effects if used in infection, but has salutary by-effects of its own, especially valuable in the bacteremia of pneumonia. The author believes that this dye has retarded and prevented a lethal outcome in a preponderant number of experimental animals which must invariably succumb to intraperitoneal pneumococcus inoculation. The fact that it acts favorably when administered by mouth, and is thus available anywhere, is not the least reason for its use in pneumonia. Tulip dye therapy is not advocated as the sole treatment of pneumonia when other tried remedies, especially serum, are so available, but as an empirically found agent which may reduce both the morbid and mortality statistics of the more virulent pneumonias, which, as is apparent from the latest information, still takes its well-known toll of both human and animal life. It has been definitely demonstrated that tulip dye is nontoxic when taken by mouth, and over a prolonged period of time (five patients have been taking this dye more or less constantly for the past six years and one for over nine years because of its apparently tonic, analgesic (gastric ulcer) and sedative actions). Laboratory experiments have shown that this dye is particularly inhibitive to encapsulated, flagellated or hemolysis producing organisms. In practice it has invariably shown an early and almost constant moderation of the clinical phenomena associated with the bacterial disease in question. This was especially observed in the prolonged existence of the case of pneumococcic meningitis. Drs. H. Hays and L. Pearlman believe that the dye was effectually additive in saving the lives of two young patients who suffered from meningitis following mastoid infection.—B. JOSEPH. *Medical Record*, 147 (1938), 284. (W. H. H.)

Undulant Fever (Brucellosis)—Diagnostic Methods in. Useful laboratory methods for diagnosis of brucellosis are: (1) Brucellergin, intradermal test. (2) Opsonic (opsonocytophagic). (3) Rapid agglutination. (4) Culture (isolation) of brucella. Occasion for mass study in Eloise

Hospital when milk supply was partly infected with brucella. Tests made on 8124 persons. Intradermal test given to all. Incidence highest for those of longest residence. 845 positives classified by opsonocytophagic test as infected or immune; 623 showed infected; 725 with negative brucellergin reactions tested by rapid agglutination method, 1 showed positive. 845 positive intradermal showed 111 positive agglutinations. 623 infected showed 33 agglutinations, and 222 immune gave 78 agglutinations. Blood cultures made for all 845 positive intradermals, and urine cultures of 370 infected. Brucella organism isolated from blood in 4 instances. Tests repeated on 286 after 5 months with negligible variation in status. Conclude brucellergin test is most sensitive of those used. Carriers may be important in spread of disease.—S. E. GOULD and I. HUDDLESTON. *J. A. Med. Assoc.*, 109 (1937), 1971. (G. S. G.)

Vaginitis of Children and of Women after Menopause—Endocrine Treatment of. Children and women after menopause susceptible to invasion of pathogenic bacteria because vaginal mucosa is thin and secretion only faintly acid or neutral. Estrogenic substance lowers *p*H of secretion and destroys bacteria. Subcutaneous injection of estrogenic solution to children may cause development of secondary sex characteristics. Amniotin in vaginal suppositories found most efficacious if applied daily, pus and discharge usually disappearing in 24 days. Should be under observation a year. Possibility of reinfection, but second treatment brings more speedy response than first. Small amounts given, and duration of treatment brief, but indications against large amounts over long period of time. Treatment of older patients past menopause is more difficult. Amniotin subcutaneously with amniotin suppositories needed, and vaginal mucosa likely to revert after treatment, and reinfection occur.—ROBERT M. LEWIS and ELEANOR L. ADLER. *J. Am. Med. Assoc.*, 109 (1937), 1873. (G. S. G.)

Vitamin A Deficiency—Signs of, in Eye, Correlated with Urinary Lithiasis. Study to determine, if possible, relationship between vitamin A deficiency and upper urinary lithiasis in human beings. Group of individuals who have or have had renal or ureteral calculi, tested for vitamin A deficiency by dark adaptation or light sensitivity test. Report on 75 patients, 25 of whom had urolithiasis, 50 controls. Twenty-four showed pathologic dark adaptation, and were placed on vitamin A therapy from 6 to 9 months. Of 15 returned for restudy only 1 showed improvement. This corroborates animal tests as to relationship between vitamin A deficiency and upper urinary lithiasis, but shows beneficial effects of vitamin A therapy in animal experiments cannot be reproduced in humans. Suggests that lack of vitamin A assimilation and urinary lithiases may have common metabolic basis.—E. J. ERICKESON and JACOB B. FELDMAN. *J. Am. Med. Assoc.*, 109 (1937), 1706. (G. S. G.)

Vitamin B_1 in Herpetic Keratitis. The authors report the effect of injections of vitamin B_1 in two cases of herpetic keratitis. The pain was rapidly relieved, the progress of the condition arrested, and cure accelerated. The authors regard the vitamin as exerting a specific action on the trophic functions of the nerves. In these two patients there was no clinical or other evidence of avitaminosis.—J. NITZULESCU and E. TRIANDAF. *Brit. J. Ophthal.* (Dec. 1937), 654; through *Brit. Med. J.*, 4032 (1938), 880B. (W. H. H.)

Vitamin C Deficiency in Peptic Ulcer. The blood content and the urinary excretion of vitamin C (ascorbic acid) have been investigated by six methods in a series of one hundred and seven subjects (fifty-one control subjects, twenty-five patients with peptic ulceration, and thirty-one patients with hematemesis). Using the urinary excretion method, groups of normal controls, miscellaneous ward controls, patients with peptic ulcers, and patients with hematemesis excreted mean amounts of 29, 17, 7 and 7 mg., respectively, daily. With the saturation test it was found that to produce a 50% excretion of the administered ascorbic acid the normal controls, patients with peptic ulceration, and patients with hematemesis required 500 to 2300, 2100 to 5000 and 2000 to 8000 mg., respectively. The initial plasma ascorbic acid value (normal 0.60 to 1.85 mg. per 100 cc., patients with peptic ulceration and hematemesis 0.14 to 0.59 mg. per 100 cc.) was an approximate measure of the vitamin C nutrition of the body tissues. An oral ascorbic acid tolerance test has been described after oral administration of 1000 mg. ascorbic acid; the maximal plasma ascorbic acid value was reached in one to two hours, while the maximal urinary excretion occurred in four to six hours; in normal controls there was a good response in both blood and urinary levels—in the ulcer and hematemesis cases the response was negligible. An intravenous ascorbic acid tolerance test following the intravenous administration of 1000 mg. ascorbic acid has also been described; the maximal plasma ascorbic acid value was reached in fifteen to twenty

minutes after the intravenous test dose, while the maximal urinary excretion occurred some two hours later. In normal cases 660 to 985 mg. of the ascorbic acid was excreted in twenty-four hours, of which 83 to 95% appeared in the first five hours; in patients with peptic ulceration and hematemesis 72 to 458 mg. of the ascorbic acid was excreted in twenty-four hours, although, as before, at least 80% appeared in the first five hours. It has been suggested that this intravenous ascorbic acid tolerance test can be simplified for routine purposes by omitting the blood determinations and merely estimating the amount of ascorbic acid excreted in the urine in the five hours after the intravenous administration of 1000 mg. ascorbic acid; this may not hold in cases with severe renal impairment. The intradermal test for vitamin C deficiency was also carried out on these cases and the results agreed very closely with those of the other tests, decolorization times longer than ten minutes indicating vitamin C deficiency. Using the six methods for determining vitamin C nutrition, it has been shown that patients with peptic ulceration and with hematemesis suffered from severe vitamin C deficiency. The severest degrees of vitamin C deficiency were found in the patients with hematemesis. It is suggested that large doses of vitamin C should be given to all subjects of peptic ulceration and hematemesis in order to saturate them as rapidly as possible.—B. PORTNOY and J. F. WILKINSON. *Brit. Med. J.*, 4027 (1938), 554. (W. H. H.)

Vitamin D in Psoriasis. Massive doses of vitamin D appear to have a beneficial effect in psoriasis. The average daily doses employed in a series of fifteen cases were 300,000 to 400,000 units. All the patients were between the ages of 30 and 50, and in all cases the disease had existed for several years. No ancillary local or dietary treatment was given. Eleven out of the fifteen patients showed complete involution within six to twelve weeks' time. There were not untoward reactions with the exception of three individuals who developed evidence suggestive of hypervitaminosis D, characterized by anorexia, nausea, malaise and urinary frequency, after ten to twelve weeks of treatment. The reactions were mild and caused no alarm or disability.—E. T. CEDER and L. ZON. U. S. A. Public Health Reports, 52 (1937), 1580; through *Pharm. J.*, 140 (1938), 211. (W. B. B.)

Vitamin K in Human Pathology. It is justifiable to conclude that the parenteral introduction of vitamin K has rendered the clotting power normal and that the increased R value before the introduction was due to reduced absorption of vitamin K from the intestine. Animal experiments with bile fistula rats have been carried out by Greaves and Schmidt (1937) who found that an excess of vitamin K in the food counteracted the hemorrhagic diathesis, and after the present work was finished Warner, Brinkhous, and Smith (1938) reported that the action of alfalfa extract mixed with bile and given by mouth was superior to the usual bile therapy. The authors are aware that the experiments given in this preliminary communication must be supplemented by a careful clinical investigation, but the fact seems already to be secured that the treatment with parenteral introduction of vitamin K will completely substitute the old bile therapy.—H. DAM and J. GLAVIND. *Lancet*, 234 (1938), 720. (W. H. H.)

Vitamin Products—Use of, in the Treatment of Diseases Not Caused by a Vitamin Deficiency. Vitamins are the order of the day; the activity of these products in which some workers have realized valuable results in the past few years is being recognized more and more. If the use of concentrated vitamin products is easily justified in cases where the disease is the result of a deficiency in vitamins, it is necessary to control the number of indications which have been discovered for the use of vitamins in disorders in which there is no avitaminosis. Vitamin A certainly performs a multiple rôle in the organism as can be shown by the numerous symptoms of A avitaminosis. Because vitamin A appears to act as a protective for cutaneous and mucous epithelial tissues, it has been recommended in various skin affections as ulcers, etc. The results are shown by the author to be irregular. The antithyroideal activity of vitamin A has suggested its use in Basedow's disease, but the results are poor. Vitamin B has been applied in cases where the symptoms simulate B avitaminosis such as neuralgias and others. The author could demonstrate no beneficial results. The protective action of vitamin B for gastro-intestinal mucosa has been employed with some success. In general, vitamin B has been applied to 55 different maladies not caused by a deficiency of this vitamin with none too gratifying results. Vitamin C has been used in the treatment of hemorrhages, in Basedow's disease, pernicious anemia and some general alimentary defects with deceiving results. Vitamin D appears to produce some beneficial effect, in general, decline of health and in dental deficiencies. The author has treated 131 maladies with concentrated vitamin preparations and, on the whole, favorable results have been rarer than would

be expected. It would be well, therefore, to examine critically the results that have been published with regard to vitamin treatments. In fact, the treatment is very burdensome and one should not resort to a non-specific vitamin medication until the usual treatments have failed.—M. J. CHARVAT. *Z. Vitaminforsch.*, 6 (1937), 339; through *Schweiz. Apoth.-Ztg.*, 76 (1938), 37. (M. F. W. D.)

Zinc Sulfate Spray for Prevention of Poliomyelitis. Solution containing 1% zinc sulfate, 1% pontocaine, 0.5% sodium chloride in distilled water proved effective preventive in experimental poliomyelitis in monkeys. Has not received sufficient controlled trial in humans. Should never be self-applied. Should be administered with long tipped atomizer by physician, and careful records kept as to possible after effects. Tests useless in winter, since summer months are open season for paralysis.—CURRENT COMMENT. *J. Am. Med. Assoc.*, 109 (1937), 958. (G. S. G.)

NEW REMEDIES

SYNTHETICS

Aktedrin Tablets (Firma Sanabo, G.m.b.H., Vienna, 12th dist.) are sold in packages of 20 and contain 0.01 Gm. secondary phenylaminopropane phosphate.—*Pharm. Presse*, 43 (1938), 278. (M. F. W. D.)

Anertan (C. F. Boehringer & Soehne, G.m.b.H., Mannheim-Waldhof) is the propionate derivative of the testicular hormone, testosterone. It is supplied as an oil solution in 1-cc. ampuls, each containing 5 mg.—*Pharm. Zentralhalle*, 79 (1938), 371. (N. L.)

Anginotrat (Nordmark-Werke, G.m.b.H., Hamburg) consists of a mixture of a sodium bismuth iodide complex ($BiI_4.Na$) 5%, and vitamin C 0.2%. The preparation is marketed in ampuls, and is recommended in the treatment of various forms of angina.—*Pharm. Ztg.*, 82 (1937), 1118. (N. L.)

Curtacaine Ointment (Firma Curta & Co., Berlin-Britz) is sold in 20-Gm. packages containing 2% *p*-butylaminobenzoyldimethylaminoethanol, 2% aluminum hydroxide, and 0.01% pentenylethoxyquinolin hydrochloride in a suitable ointment base.—*Pharm. Presse*, 43 (1938), 278. (M. F. W. D.)

Esidron, a diuretic, is the sodium salt of quinolinic acid monoallylamide-mercurihydroxide. It is used in the same way as mersalyl and similar compounds, in the form of a 10% solution containing theophylline. Its use is contra-indicated in inflammatory conditions of the kidneys, colitis, cachexia, anemia, severe fever, or disease of the liver. Esidron causes a greatly increased excretion of salt, and its action is assisted by previous administration of ammonium chloride or nitrate. For intravenous administration 0.5 cc. is first given, at intervals of a few days, increasing up to 2 cc. Intramuscular injection may also be employed.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 173. (S. W. G.)

Igitol Pills for cattle (Firma Behringwerke, I. G. Farben. A.-G., Leverkusen a. Rhine) contain 30 Gm. hexachloroethane and are put up in pacakges of 6. **Igitol Pills** for sheep are sold in packages of 6 each containing 10.0 Gm. hexachloroethane. **Igitol Powder** is put up in packages of 1200 Gm. and contains 10% hexachloroethane in a suitable diluent.—*Pharm. Presse*, 43 (1938), 278. (M. F. W. D.)

Kres-Lumin is a fluid preparation containing luminal $^1/_{16}$ gr. in 1 fl. drachm combined with cresival (cresol calcium sulfonate). Cresival resembles beechwood creosote in its action as an expectorant and antiseptic, but it is non-toxic and non-irritating to the gastro-intestinal tract. This combination of an antispasmodic and an expectorant is recommended for the treatment of acute and chronic bronchitis, whooping-cough and phthisis. The dose for adults is 2 to 3 teaspoonfuls, 3 or 4 times daily; children can be given $^1/_2$ to 1 teaspoonful. The dose is best given mixed with an equal quantity of water. Kres-lumin is supplied in 4- and 16-oz. bottles.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 173. (S. W. G.)

Metycaine preparations contain γ-(2-methylpiperidino)-propyl benzoate hydrochloride, which is an odorless, white, crystalline powder, soluble in water, alcohol and chloroform, but insoluble in ether and olive oil. Solutions of metycaine are stable and may be sterilized by boiling. Metycaine is primarily designed for spinal anesthesia, when the anesthesia produced is longer and safer than when procaine is used, but is also of great value in various types of nerve block and tissue infiltration; it produces surface anesthesia with rapidity, on injection into the urethra or bladder,

and used as a spray, it facilitates the examination and treatment of the nose and throat in rhino-laryngology. In spinal anesthesia, a 10% solution is used. In urology, a 2–4% solution is injected, or the urethra may be anesthetized by allowing 1 or 2 tablets (1/2 gr.) to dissolve in the urethral moisture. In surgery, solutions of 1/4 to 2% are recommended. For rhino-laryngology, a 2% solution used as a spray is satisfactory prior to examination, while for operation, 5–10% solutions or a paste are preferable, the latter containing also adrenaline if desired; infiltration with 2% solution is desirable before tonsillectomy. In ophthalmology, instillation of a 2% solution produces anesthesia in 1–2 minutes, lasting for about 10; while in diathermy a 10% solution applied to the area before electro-coagulation is effective. For proctology, a 5% solution produces anesthesia in 5–15 minutes, and in dentistry a 2% solution is used. Metycaine is supplied in 1/2-oz. bottles, in tablets of 0.15 Gm. in tubes of 10; in tablets of 1/2 gr. (0.0325 Gm.) in tubes of 20 and bottles of 100; in 2% solution in bottles of 1 oz.; in 2% solution in 1-cc. ampuls in boxes of 6; in 2.5-cc. ampuls containing 2% of metycaine and 1:50,000 of adrenaline in boxes of 6; in 1-cc. ampuls containing 2% of metycaine and 1:25,000 of adrenaline in boxes of 6; as a 4% ointment in 1-dr. tubes.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 174. (S. W. G.)

Neo-Solganal (Schering A.-G., Berlin) is a calcium-gold-keratinate complex containing 14% gold and 7% calcium. It is supplied in ampul form and is indicated in the treatment of skin tuberculosis.—*Pharm. Zentralhalle*, 79 (1938), 356. (N. L.)

Othaesin (Sächsisches Serumuerk A.-G., Dresden) consists of perkain dissolved in anhydrous glycerin. It is said to be a very potent local anesthetic.—*Pharm. Zentralhalle*, 79 (1938), 357. (N. L.)

Otodolor (O. Ewringer, Apotheker, Saarbrücken) consists of *p*-aminobenzoyldiethylaminoethanol and phenyldimethylpyrazolon in anhydrous glycerin.—*Pharm. Zentralhalle*, 79 (1938), 386. (N. L.)

Pharmaceuticals—New. Rectidon, a *sec*-amyl-β-bromallylbarbituric acid, melting at 161–163° is a good hypnotic. **Pentobarbital,** 5-ethyl-5-methylbutylbarbituric acid (sodium salt nembutal), melting at 129.5°, is a narcotic. **Lactan** is 1.5% solution of casein dispensed in ampuls. **Acriquin,** diethylaminoisopentyl-9-amino-7-methoxy-3-chloroacridine, analogous to atebrin, melting at 248–250°, is a good antimalarial of low toxicity. **Plasmocid,** 6-methoxy-8-diethylaminopropylaminoquinoline, as methylenebisalicylate, is superior to quinine and atebrin in tropical malaria.—E. SHASS. *Farm. Zhur.*, 1 (1937), 59; through *Chem. Abstr.*, 32 (1938), 3090. (F. J. S.)

Pyrasulf Ampuls (R. Weil, Frankfurt a. M.) are put up in packages of 2 ampuls containing 0.50 Gm. amidophenazostrontiumsulfosalicylate in 5 cc. distilled water. **Pyrasulf Suppositories** are available in packages of 10 suppositories containing in each 1.0 Gm. amidophenazostrontiumsulfosalicylate. **Pyrasulf Tablets** contain in each 0.50 Gm. amidophenazostrontiumsulfosalicylate and are sold in packages of 10.—*Pharm. Presse*, 43 (1938), 278. (M. F. W. D.)

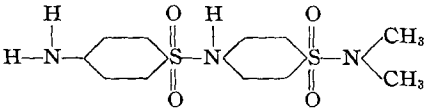
Quinine-Weil Tablets (R. Weil, Frankfurt a. M.) are sold in packages of 8 tablets containing in each 0.25 Gm. quinine phenylcinchonate.—*Pharm. Presse*, 43 (1938), 278. (M. F. W. D.)

Triamid is stated to have the composition, α-acetyl β-methyl β-dimethyloxamide β-phenylhydrazine. It is a colorless, odorless crystalline compound having a slightly bitter taste, and soluble 1 to 3 in water. With sodium salicylate or benzoate the solubility increases. Triamid is stable and the solution is not decomposed by air, light or by boiling. It is suggested for use in place of amidopyrine as an antipyretic and sedative. It is claimed that the toxicity of this substance is negligible, the acetyl group reducing the toxicity at the same time increasing its fibrifugal and analgesic action. In acute infectious diseases, the course of the fever can be regulated by small doses of 3/4 to 1 1/2 grains two hourly. It is claimed to be of value in prevention of high temperature in tubercular patients. Acute and chronic rheumatoid polyarthritis respond to large doses 30 to 45 grains daily. Triamid is also recommended as a general sedative, which can be combined with other antispasmodics and analgesics. Tablets of 1 1/2 grains are supplied in bottles of 25, 100, 250 and 1000. The 5-grain tablets are supplied in 25, 100 and 500 bottles. Triamid powder can also be obtained in 1/2-oz. and 1-oz. packages.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 176. (S. W. G.)

Trisomin tablets contain synthetic hydrated magnesium trisilicate and are intended for the treatment of gastro-intestinal disorders, such as peptic ulcer and certain diarrhoeas, which are

benefited by an antacid and adsorbent therapy. The time required for neutralization of acid is proportional to the weakness of the latter, and alkalosis cannot occur, since the substance, being insoluble in water and weak alkali, remains unabsorbed if it is present in excess. No undesirable effects were noticed in human subjects given considerable quantities of this substance over periods of three weeks. In the treatment of peptic ulcer, 1 to 4 tablets should be given, preferably between the customary frequent feedings. For adsorption in the intestine, larger doses may be given every three hours. Trisomin is supplied in bottles containing 40 and 500 tablets each of 7½ grains.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 176. (S. W. G.)

Uliron (Bayer, I. G. Farben. A.-G., Leverkusen) is 4-(4'aminophenylsulfonamide)-phenylsulfondimethylamide having the formula,



It is a white, crystalline powder, melting 193–195°, sparingly soluble in water but readily soluble in alkaline solutions, slightly soluble in acetone, but more so in methyl and ethyl alcohol. It is recommended as a chemotherapeutic agent in the treatment of staphylococci, gonococci and streptococci infections. The chemical is supplied in tubes of 10 and 20 tablets, each containing 0.5 Gm. of the medicinal, and as a 50% salve.—*Pharm. Ztg.*, 82 (1937), 1164. (N. L.)

Verasulf Tablets (R. Weil, Frankfurt a. M.) contain in each 0.30 Gm. diethylbarbituric acid acetphenetidin and 0.20 Gm. strontium salt dimethylaminopyrazolon-sulfosalicylic acid and are sold in packages of 10.—*Pharm. Presse*, 43 (1938), 278. (M. F. W. D.)

Specialties

Adepdolon (Adepdopon-Vertrieb, Berlin) consists of sodium sulfate, magnesium sulfate and urea borate.—*Pharm. Zentralhalle*, 79 (1938), 370. (N. L.)

Adrax tablets are of two kinds which are intended to be taken as a combined treatment. The white tablets contain in each, potassium citrate 10 grains, potassium acetate $^9/_{10}$ grain, potassium bicarbonate $12^1/_2$ grains. The brown tablets contain in each aloes 1 grain, potassium nitrate 1 grain, asafoetida 1 grain, methylthionine hydrochloride $^1/_8$ grain, capsicum $^1/_2$ grain, oil of juniper $^1/_2$ minim. The tablets are recommended in nephritis, cystitis, prostatitis, functional albuminuria and arthritis. The white tablets present a combination of well-tried medicaments associated with the successful treatment of retention, or suppression, of urine, and are calculated to maintain the acid-base equilibrium so frequently disturbed in these conditions. The brown tablets provide a cathartic element to promote satisfactory elimination, together with essential oils associated with disinfection of the urinary system.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 171. (S. W. G.)

Alsichol (Kräuter-Vertrieb, Berlin-Niederschönhausen) consists chiefly of primula, juniper, senna, taraxacum, matricaria, frangula, centaurium, drosera and licorice. It is recommended in the treatment of hemorrhoids and bone disorders.—*Pharm. Zentralhalle*, 79 (1938), 370. (N. L.)

Amphoteric Gel is a palatable colloidal 5% suspension of aluminum hydroxide. It is able to neutralize at least twelve times its own volume of acid, but the reaction ceases at p_H 4.2 to 5.0. Because of this property it is recommended for the treatment of hyperacidity and gastric and duodenal ulcers. Amphoteric gel neutralizes only the excess of acid, leaving the stomach still slightly acid. The dose suggested is 1 to 2 teaspoonfuls three or more times daily. Amphoteric gel is supplied in 6-oz. and 12-oz. bottles.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 171. (S. W. G.)

Appendilon (Ilon, Freiburg Breisgau) consists chiefly of crocus, eugenol, anethol, calamus root, chamomile, frangula, angelica and fennel seed. It is indicated in the treatment of various chronic abdominal diseases, and is supplied in packages of 100 Gm.—*Pharm. Ztg.*, 82 (1937), 1217. (N. L.)

Arhama Tincture (Bombastus-Werke, Freital-Zauckerode b. Dresden) consists chiefly of extracts of colocynth, cinchona and sage dissolved in alcohol. It is recommended as a stomachic and astringent.—*Pharm. Zentralhalle*, 79 (1938), 250. (N. L.)

Asthmapyrin (O. Kiessner, Hansa-Apotheke, Leipzy-Probetheida) consists of a decoction of polygala, quebracho and lobelia with potassium iodide, codeine phosphate and epinephrine.—*Pharm. Zentralhalle*, 79 (1938), 250. (N. L.)

Besama Tincture (Dr. J. Schäfer Nachf, Apotheker, C. Bessenbach, Essen) is an alcoholic extract consisting of camphor, salicylic acid, resorcinol, together with the dissolved principles of arnica, chamomile, Siam benzoin and eucalyptus. It is recommended in the treatment of eczemas, psoriasis, etc.—*Pharm. Zentralhalle*, 79 (1938), 251. (N. L.)

Biber-Chamomile (Biber-Bonbonsfabrik, Stuttgart-Feuerbach) consists of chamomile and extract of malt, and is recommended as a cough remedy.—*Pharm. Zentralhalle*, 79 (1938), 251. (N. L.)

Caapi tablets contain in each, atropine sulfate $^1/_{180}$ grain, caffeine 1 grain, phenacetin 2 grains, quinine $^1/_4$ grain, cinnamon 1 grain. They are recommended for coryza and will abort and attack in thirty hours. Relief is provided in hay fever, asthma and migraine. Atropine and caffeine exert a mutual synergic action, and the combined stimulating action on the brain relieves the depression associated with the catarrhal syndrome. Phenacetin is probably the safest "coal-tar" analgesic-antipyretic. It exerts a specific action on the heat regulating center and relieves pain by depressing the basal ganglia. Quinine and cinnamon represent an excellent combination of antiseptic and antipyretic drugs. The tablets are available in boxes of 12 and bottles of 200.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 171. (S. W. G.)

Carbomucil consists of granules of high grade activated charcoal with a central core of desiccated vegetable mucin (normacol). The value of activated charcoal as an adsorbent of toxic material in the gastro-intestinal tract is acknowledged. Two major difficulties have attended its use in the past. A great deal of the adsorbent property of the charcoal was exhausted in the stomach, and the patient became constipated with the regular injection of the charcoal. This product is constructed so that disintegration takes place in the bowel, where the charcoal is brought into complete contact with the toxic agents, and the vegetable mucin, by preserving the contents in a moist bulky form, prevents constipation and stimulates evacuation. Carbomucil is packed in 4-oz. tins.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 171. (S. W. G.)

Chophytol "Rosa" (Laboratories Rosa, Rue Roger, Bacon-Paris) is the dried extract of *Cynara scolymus*. It is marketed as a dragee and is recommended in the treatment of bile and liver disorders.—*Pharm. Zentralhalle*, 79 (1938), 434. (N. L.)

Citrogranol (Syngala, Wien) is a catalytically sterile mineral oil containing the higher active hydrocarbons with organic sulfur derivatives.—*Pharm. Zentralhalle*, 79 (1938), 434. (N. L.)

Citrosulf-Bohnen (Nordmark-Werke, G.m.b.H., Hamburg) contains cysteine, vitamins A, B and C and dimethylaminophenazon. It is recommended as an antineuralgic and antirheumatic.—*Pharm. Zentralhalle*, 79 (1938), 371. (N. L.)

Citro-Thiocol is a pleasant-tasting cough syrup containing thiocol 24 grains, codeine phosphate $^1/_2$ grain, acid sodium citrate 20 grains, chloroform $^3/_4$ minim, alcohol 7 minims, glycerin extract of licorice 124 minims in each fluid ounce. Thiocol is a guaiacol derivative which exerts a sedative and expectorant action; codeine relieves the hacking cough of phthisis and general irritation by depressing the cough center, an action which is assisted by chloroform; while the bronchial secretion is liquefied by the sodium citrate. Citro-thiocol is thus of value in all conditions in which cough is a prominent symptom. The dose is 1 to 2 teaspoonfuls every 2 to 3 hours, both for children and adults. Citro-thiocol is packed in bottles containing 4 and 40 fl. oz.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 172. (S. W. G.)

Combizym Dragees (Luitpold-Werk, München) contain a mixture of enzymes from both animal and plant sources, consisting chiefly of amylase, proteases, esterases, cellulase, zellobiase, lipase and phosphatase. It is recommended in the treatment of various gastro-intestinal disturbances.—*Pharm. Zentralhalle*, 79 (1938), 251. (N. L.)

Coréine is a pure chemically inert mucilaginous substance, which absorbs 40–50 times its own bulk of water, and in this colloidal state adsorbs toxins. It is suggested for the treatment of constipation, producing in the intestinal tract a voluminous mass which is an efficient stimulus to peristalsis. Where constipation is due to spasm, coréine adsorbs the toxins causing irritation of the mucous membrane, so lessening the spasm. Proctitis may be treated by a rectal injection of a mucilage made from 1 drachm of coréine in 4 fl. oz., to which may be added bismuth subgallate, and tincture of opium if necessary. When the pelvic colon is involved 6–12 oz. should be injected, and

retained during the night. Morning constipation can be overcome by the addition of 2 oz. of liquid paraffin to the emulsion. Coréine is also suggested for the treatment of colitis, and for constipation during pregnancy, and lactation, when other drugs cannot be used. Coréine is supplied as flakes and as granules. The average dose is one teaspoonful with each of the three principal meals. The flakes should be stirred up with a small quantity of milk, weak tea or soup, and taken immediately in a spoon. The granules are taken dry in the mouth, and swallowed with a little liquid. Coréine flakes are supplied in tins of approximately 5 oz., the granules in tins of approximately 4 oz.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 172. (S. W. G.)

Décrose is a preparation of glucose containing vitamin D and calcium glycerophosphate, the amount of vitamin D being sufficient for the assimilation of the calcium and phosphorus. It is recommended for the treatment of debility, malnutrition, anorexia, cyclical vomiting in children, in convalescence, and for nursing mothers and growing children. The dose for children is $^1/_2$ to 1 teaspoonful, for adults $^1/_2$ to 1 dessertspoonful three times daily. It can be taken sprinkled on fruit or cereals, or dissolved in lemonade. Décrose is supplied in 1-lb. and 7-lb. tins.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 172. (S. W. G.)

Diuromil is a diuretic containing piperazine tartrate, 3.321; piperazine citrate, 2.223; hexamine, 3.5; disodium phosphate, 2.324; lithium salicylate, 0.8; lithium benzoate, 0.725; effervescent base, to 100. Diuromil, which is not only a uric acid solvent, but is also capable of preventing the formation of endogenous purins, is of value in uricaemia and nephritic colic, restoring the p_H of the blood to normal and maintaining the acid-base equilibrium. The dosage in gout, rheumatism, calculus and renal colic is 1 teaspoonful in water, three to five times daily, fifteen minutes before meals and on retiring. In chronic cases, or as a prophylactic, 1 teaspoonful should be taken twice or three times daily, for about a fortnight, from time to time during the year.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 172. (S. W. G.)

Esbericid Tablets (Schaper & Brümmer, Fabrik biologischer Erzeugnisse, Ringelheim-Harz) is a homeopathic preparation consisting of belladonna, eupatorium, aconite, gelsemium, bryonia and phosphorus. It is recommended in the treatment of grippe.—*Pharm. Zentralhalle*, 79 (1938), 371. (N. L.)

Esberigut (Schaper & Brümmer, Fabrik biologischer Erzeugnisse, Ringelheim-Harz) is a homeopathic preparation containing tincture of hydrastis, glycerin, potassium bichromate, copaiba, belladonna, thyme and sabadilla. It is recommended in the treatment of catarrh of the epididymis.—*Pharm. Zentralhalle*, 79 (1938), 371. (N. L.)

Esberipekt (Schaper & Brümmer, Fabrik biologischer Erzeugnisse, Ringelheim-Harz) is a homeopathic cough remedy containing hyoscyamus, belladonna, drosera, ipecac, phosphorus, bryonia and conium. It is marketed in the form of tablets.—*Pharm. Zentralhalle*, 79 (1938), 371. (N. L.)

Esberisept Tablets (Schaper & Brümmer, Fabrik biologischer Erzeugnisse, Ringelheim-Harz) is a homeopathic preparation consisting chiefly of belladonna, potassium bichromate, mercuric chloride, barium carbonate and aconite. It is recommended in the treatment of angina and tonsillitis.—*Pharm. Zentralhalle*, 79 (1938), 371. (N. L.)

Esgosan (E. Schwarz, G.m.b.H., chem.-pharmaz. und radioaktive Präparate, Berlin) consists of a mixture of syrup, extract of malt and casein-free skimmed milk.—*Pharm. Zentralhalle*, 79 (1938), 371. (N. L.)

Felsol-Quinine (Roland K.-G., Chem. Fabrik, Essen) is a powder containing 1 Gm. felsol and 0.1 Gm. quinine. It is recommended in the treatment of pneumonia, bronchitis and grippe.—*Pharm. Zentralhalle*, 79 (1938), 371. (N. L.)

Ferræmia tablets contain exsiccated ferrous sulfate, $^3/_4$ gr.; dried yeast, 2 gr.; copper sulfate $^1/_{100}$ gr.; manganese hypophosphate, $^1/_{32}$ gr.; excipient, $^5/_8$ gr.; chocolate coating, *q. s.* to $8^1/_2$ gr. Ferræmia is indicated in all conditions where iron is required, and is especially valuable in the microcytic hypochromic anemias, ferrous iron, copper and yeast all being of great importance in this condition. These tablets are also of use as an adjuvant to liver therapy in the treatment of pernicious anemia; and alone in neurasthenia, debility, chlorosis and convalescence. The dose varies, but at the commencement of the treatment 1 to 2 tablets should be taken three times a day after meals, the dose later being reduced according to the progress of the case, many of which may need periodical courses of treatment indefinitely. Ferræmia is packed in bottles of 60 tablets.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 173. (S. W. G.)

Glesol capsules contain in each, levurine (an active yeast extract) 0.12 Gm., colloidal tin 0.05 Gm., colloidal sulfur 0.03 Gm., *Bacillus glycobacter* 500,000, *Bacillus acidi lactici* 10 millions. They are coated with gluten to prevent disintegration before reaching the intestine, and are well tolerated. Glesol capsules are recommended in furunculosis, abcess and other conditions due to staphylococcal infection. They are issued in bottles of 50.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 173. (S. W. G.)

Gonadyl (Roussel Laboratories Ltd., London) is the gonadotropic hormone from the serum of pregnant mare. Follicle stimulating hormone. Physiological stimulator of the secretions of ovarian and testicular hormones It is supplied in ampuls for subcutaneous injections. Biological standardization—40 Eraus units (160 mouse units approximately). It is marketed in boxes of six ampuls of gonadotropic hormone and six ampuls of solvent.—*Australas. J. Pharm.*, 19 (1938), 495. (A. C. DeD.)

Hawipur (Kola-Kampf-Labor., Rolf-Zoeller, Hamburg) consists of soap, phenol, oil of lavender and alcohol. It is used in the disinfection of instruments.—*Pharm. Zentralhalle*, 79 (1938), 371. (N. L.)

Infantussin (Pharmaz. Labor. Apotheker A. Mayer, Aschaffenburg) contains althaea, thyme, castanea, drosera, pimpinella, salvia, solution of ammonia and compound tincture of benzoin and camphor. It is recommended as an expectorant for children.—*Pharm. Zentralhalle*, 79 (1938), 385. (N. L.)

Lanaclarin (Sanabo, G.m.b.H., Wien) is a cardiac remedy containing the glycosides of *Digitalis lanata*. It is supplied in ampuls of 2 cc. with 0.4 Gm. glycosides, as a solution (1 cc. = 0.5 Gm. glycosides) and as a tablet, each containing 0.5 Gm. glycosides.—*Pharm. Zentralhalle*, 79 (1938), 385. (N. L.)

Laveco Tea (Kyffhäuser-Labor., Bad Frankenhausen) consists principally of betula leaves, frangula, arnica, peppermint leaves and strawberry leaves.—*Pharm. Zentralhalle*, 79 (1938), 386. (N. L.)

Lecithinkiem (R. E. Klebs, München) contains 66% lecithin, 33% vegetable oils (containing vitamins) and perfume. It is recommended as a nervine and sedative.—*Pharm. Zentralhalle* 79 (1938), 386. (N. L.)

Lutren (Bayer Products Ltd., London) is the synthetic corpus luteum hormone, *i. e.*, progesterone. Used for abortion, hyperemis gravidarum, pregnancy toxemia, menorrhagia and female sterility. Injections as physician directs. It is marketed in boxes of 1 and 5 x 1 cc. ampuls, 2 x 5 international units per cc.—*Australas. J. Pharm.*, 19 (1938), 495. (A. C. DeD.)

Melvaron contains in each fl. oz. 28,000 U. S. P. units of vitamin A, 8000 U. S. P. units of vitamin D, 112 international units of synthetic vitamin B_1, 35 Sherman units of vitamin B_2 complex, 4 grains of green iron and ammonium citrate and 240 minims of malt extract. The vitamins A and D are represented as fish liver oils and the vitamin B_2 complex is derived from liver. Melvaron is primarily intended as a tonic or reconstructive food, and is convenient and palatable to take. For infants, the dose is $^1/_2$ to 1 teaspoonful; for older children, 1 to 2 tablespoonfuls, in each case three times daily. Melvaron is supplied in bottles containing 1 lb.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 174. (S. W. G.)

Nervocamp (A. G. für medizinische Produkte, Berlin) contains calcium bromide, extract of scrophularia, antipyrine and sodium barbiturate. It is used as a soporific and is supplied as a syrup and in the form of drops.—*Pharm. Zentralhalle*, 79 (1938), 356. (N. L.)

Nestrovite is a concentrate of vitamins A, B_1, C and D, supplied in the form of emulsion and tablets. Both preparations are standardized, the vitamin activity being stated in international units. A dose of two tablets contains 1300 units of vitamin A, 130 units of vitamin B_1, 400 units of vitamin C and 1300 units of vitamin D. One teaspoonful of nestrovite emulsion contains 500 units of vitamin A, 42.5 units of vitamin B_1, 135 units of vitamin C and 500 units of vitamin D. Nestrovite is indicated in pregnancy and lactation, during infancy and in childhood, to maintain adequate supplies of the four vitamins. It is also recommended for the treatment of diseases due to faulty nutrition. The dose of the emulsion is from 1 to 3 teaspoonfuls daily. The dose for infants can be mixed with the feed. One or two tablets can be taken daily. Nestrovite emulsion is supplied in 4½-oz. bottles. The tablets are supplied in boxes of 20 and 100.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 174. (S. W. G.)

New Remedies. The following new remedies have recently made their appearance on the market: **Angioxyl,** a standardized pancreatic extract, entirely free from insulin, prepared from the pancreas of the ox; **Embryonin,** human placental extract, the placentæ being obtained from a maternity hospital in London; **Proluton,** standardized crystalline corpus luteum hormone in oily solution for intramuscular injection; **Rubiazol,** carboxy-sulfamino-chrysoidine, an azo dye; **Thrombin Coagulent,** a stable preparation of thrombin, the natural clotting agent of the blood.—ANON. *Pharm. J.*, 140 (1938), 484. (W. B. B.)

New Remedies. Antipect contains ext. thym. fl., sod. benz., sod. benz. benzoyl-thymoloxy-benz., sod. brom., tinct. zingib., tinct. aurant.; it is indicated in bronchitis, laryngitis, pharyngitis, whooping-cough. **Caapi** contains atropine sulfate $^1/_{180}$ gr., caffeine 1 gr., phenacetin 2 gr., quinine $^1/_4$ gr., cinnamon powder 1 gr. **Carbomucil** contains granules of activated charcoal, each having a central core of desiccated vegetable mucin. **Vi-Pon** contains phosphorus (as phosphates), nitrogen, stearin-cholesterin, cajuput oil; it is used for convalescence and exhaustion. **Osto-calcium Tablets** contain vitamin D (calciferol G. L.) 500 international units, calcium sodium lactate $7^1/_2$ gr., calcium phosphate $2^1/_2$ gr., excipient *q. s.* 20 gr.—ANON. *Pharm. J.*, 140 (1938), 316. (W. B. B.)

New Remedies. The following new remedies have made their appearance on the market recently: **Ephetonin Compositum Liquidum,** a solution containing 2% each of ephetonin and pyrazine carboxylic acid-isopropylidenehydrazide, 1 cc. (approximately 10 drops) contains 0.02 Gm. of each. **Iodamelis,** an organic combination of iodine and hamamelidin; **Pantavene,** the active principles of oats, each tablet containing total extract of *Avena sativa*, 0.06 Gm.; **Painex,** each tablet contains acetylsalicylic acid 3 grains, phenacetin 2 grains, caffeine 0.5 grain, phenolphthalein 0.2 grain; **Urandil,** iodine 9.7%, uranium 9.2%, zinc oxide 12%, in a vehicle of lanolin and soft paraffin.—ANON. *Pharm. J.*, 140 (1938), 564. (W. B. B.)

Pancreotest is an antigen-free crystalline secretion prepared from pig's intestine, issued for use as a diagnostic test of the functional condition of the pancreas and gall-bladder. It is free from cholecystochinin and other hormones. Pancreotest is only active when given by intravenous injection. One clinical unit per Kg. of body weight in sterile solution in normal saline is injected, and specimens of the duodenal contents are then collected at intervals by means of a special catheter. Pancreotest causes a secretion from the pancreas to the intestine and stimulates the secretion of bile from the liver into the gall-bladder. In the absence of cholecystochinin there is no emptying of gall-bladder contents. In cholecystectomized patients and in cases where the gall-bladder does not fill on cholecystography, the liver bile flows directly into the duodenum. On the gall-bladder regaining its ability to fill, the secretin effect just described does not take place. Admixture of bile with duodenal contents after injection of pancreotest shows a gall-bladder defect. It will be seen that this material enables a hitherto unattainable simultaneous analysis of the function of the pancreas as also to some extent that of the gall-bladder. The hormone is biologically standardized, and also clinically compared on man. Pancreotest is packed in 80 and 100 clinical units in boxes of 3 and 10 ampuls. It is also available in tubes of 0.25 Gm. and 1 Gm.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 175. (S. W. G.)

Parvomed Tablets contain phenazone, phenazone salicylate, phenacetin, caffeine and magnesium oxide. This combination is recommended as an anti-neuralgic, antipyretic and analgesic. The dose of 2 tablets may be repeated up to a maximum of 8 tablets a day. The tablets should be crushed in the mouth, or dissolved in any fluid. Parvomed does not cause digestive or circulatory disturbance, and overdosage will not produce toxæmia. It is supplied in packets of 10 and 20 tablets.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 175. (S. W. G.)

Plastules Haematinic Compound is a combination of ferrous iron, and a concentrated yeast extract in a semi-fluid form kept stable in a plastic gelatin capsule. The plastules are also supplied containing in addition liver extract. These preparations are recommended for the treatment of secondary anæmias, general debility and in convalescence. The plastules do not cause digestive disturbance, and they do not stain the teeth. The dose is one plastule 3 or 4 times daily, preferably taken in warm water after meals.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 175. (S. W. G.)

Reticulogen is a preparation of liver, with vitamin B_1, in ampuls for intramuscular injection. Each ampul of 0.5 cc. contains sufficient of the purified antipernicious anæmia principle of liver to exert an effect, upon injection, comparable with that obtained by ingestion of 3-4.5 Kg.

of fresh liver, with 500 international units of vitamin B_1. Each batch is standardized on known cases of pernicious anæmia in relapse. Reticulogen is indicated, not only in pernicious anæmia, but also in sprue and pellagra. The dose in relapse is 3 ampuls on successive days, after which 1 at intervals of one or two weeks is usually sufficient for maintenance; but this dosage may require revision in individual cases. Reticulogen is supplied in boxes containing three ampuls of 0.5 cc., and in 5-cc. ampuls.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 175. (S. W. G.)

Sanadormin (Homeopathische Zentrale, V. Mayer, Bad Cannstatt) consists chiefly of oat, passion flower, cannabis and arnica. It is recommended as a sedative.—*Pharm. Zentralhalle*, 79 (1938), 386. (N. L.)

Serenol (Continental Laboratories Ltd., London) is the campho-sulfonate of sparteine and of ephedrine; extracts of boldo, crataegus and salvia; tincture of marrubium; glycerinated extract of thyroid; valerian and hexamido. It is used for conditions of anxiety and general irritability, insomnia, hyperthyroidism, hyperadrenalism, so-called nervous palpitations of the heart. The dose in mild cases, one or two dessertspoonfuls at 10:00 A.M., one at 4:00 P.M. and two on retiring. It is available in 4-oz. bottles.—*Australas. J. Pharm.*, 19 (1938), 495. (A. C. DeD.)

Siodan (Asta Aktiengesellschaft, Chem. Fabrik, Brackwede i.W.) consists chiefly of tricalcium citrate, chamomile, centaurium and extract of thyme. It is recommended as a stomachic and alkalizer, and is marketed as a powder in packages containing 15 2-Gm. individual papers, and as a tablet in packages of 40.—*Pharm. Ztg.*, 82 (1937), 1150. (N. L.)

Siran Drops (Temmlerwerke, Berlin) contains ammonium guaiacol-sulfonate, methylephedrine, extract of thyme and saponin. It is used as an expectorant.—*Pharm. Zentralhalle*, 79 (1938), 357. (N. L.)

Tellangin is a tannin-coated tablet containing acridine. The tablets are recommended as a bactericide for the treatment and prevention of affections of the mouth and throat, due to infection. The tannic acid is claimed to enhance the bactericidal power of the acridine. The dose is 1 or 2 tablets dissolved slowly in the mouth every hour. Tellangin is supplied in boxes of 30 tablets.—*Quart. J. Pharm. Pharmacol.*, 11 (1938), 176. (S. W. G.)

Topagene (Sharp and Dohme Ltd., London) is a sterile solution of soluble antigenic substances derived from recently isolated phase I cultures of *H. pertussis*. Each cc. represents the antigenic substances derived from 20,000 million organisms. It is used in cases of pertussis. The preparation is employed as an intranasal instillation. It is marketed in 5-cc. vials, fitted with pipette bulb stopper.—*Australas. J. Pharm.*, 19 (1938), 495. (A. C. DeD.)

Vulnovitan (Chem. Fabrik Gedeon Richte, A.-G., Budapest X) is a vitamin A preparation. It is marketed as a salve containing 500 units of vitamin A per Gm., and in the form of a sterile mineral oil solution, each cc. representing 1000 units. It is recommended as an antiseptic in surgical work.—*Pharm. Ztg.*, 82 (1937), 1118. (N. L.)

BACTERIOLOGY

Alcohol—Sterility of. One hundred and twenty-five samples of commercial ethyl alcohol, consisting of 100 samples of 95% alcohol and twenty-five samples of absolute alcohol, were obtained on the open market from as many different sources as possible. All of these, samples of ethyl alcohol produced in this country, were found to be free of bacteria and their spores. This is in contrast to reports from Europe where the commercial product was found to be contaminated frequently with spore-formers. Alcohol (95%) did not kill *Bacillus megatherium* and *B. subtilis* until after approximately three months' exposure in the first instance, and seven and nine months, respectively, were required for the destruction of the two strains of *B. subtilis* used in this experiment.—L. GERSHENFELD. *Am. J. Pharm.*, 110 (1938), 159. (A. C. DeD.)

Antiseptics—Hospital, and Their Comparative Value. M. attacks the phenol coefficient and other indexes for the relative evaluation of antiseptics on the grounds that such indexes must be obtained under highly standardized artificial conditions and that different compounds vary widely in the degree of change in antiseptic activity with deviations from the standard conditions. He proposes instead that studies be made of what each disinfectant may be expected to accomplish under various given conditions, without comparisons with other disinfectants. Factors which should be considered are the influence of organic matter, sputum, saliva, blood, serum, feces, urine, food, etc., in different quantities and of different qualities; the influence of concentration, metals, salts, acids, alkalies, oxidizing agents, reducing agents; the action on cotton, silk, wool, dyes,

paints, metals, etc.; the toxicity toward the eye, buccal cavity, urethra, gastro-intestinal tract, normal skin, injured skin; the effect on spores; the effect on various types of bacteria, etc. M. proposes that present requirements for antiseptics and germicides which are entirely superficial be removed from the statutes. He considers it useless to attempt to decide whether any given compound is an antiseptic or germicide, since almost any chemical has some range of concentrations which will injure bacteria and some range which will kill them.—MAX S. MARSHALL. *Hospitals*, 2 (1938), 44; through *Chem. Abstr.*, 32 (1938), 3902. (F. J. S.)

B. Coli in Drinking Water—Determination of. Difficulties of transport are avoided by inoculating (through a rubber cap) the water sample directly into the tube of test medium.—P. KOSCHUCHAROV. *Zentr. Bakt. Parasitenk.*, I, 139 (1937), 364–370; through *J. Soc. Chem. Ind.*, 57 (1938), 325. (E. G. V.)

Bacteria—Preservation of, Dessicated in a Vacuum at Room Temperature. Most pathogenic bacteria can be preserved in a viable state over long periods of time by desiccation in a vacuum at room temperature. The following are to be observed: (1) Cultures are to be grown under optimum conditions. (2) Adequate amounts of sediment for desiccation. (3) Development of a vacuum of 2 mm. of mercury rapidly. (4) Rapid desiccation. (5) Storage in desiccator overnight. (6) Storage in sealed tubes in dark. (7) The planting of optimal amounts of desiccated bacteria or in favorable culture media for recovery. (8) The tubes used for desiccation should be chemically clean and free from traces of deleterious substances.—N. P. SHERWOOD and L. L. CORIELL. *J. Kansas M. Soc.*, 38 (1937), 506; through *Am. J. Pharm.*, 110 (1938), 142. (A. C. DeD.)

Bacteria and Molds—Effect of Certain New Antiseptics on. Approximate toxic concentrations of esters of *p*-salicyclic acid as determined for 4 bacteria and 2 unidentified molds were: methyl esters (Nipagin M and Solbrol M) 0.2–0.25%; propionic esters (Nipasol M and Solbrol P) 0.05%; tolyl ester (Solbrol Z) 0.002–0.008%.—O. TURTIAINEN. *Zentr. Bakt. Parasitenk.*, I, 139 (1937), 98–110; through *J. Soc. Chem. Ind.*, 57 (1938), 319. (E. G. V.)

Bacteriological Quality of the Ice-Cream Supply for a Small City. Examination of 226 samples for total and coliform counts showed that gelatin and coloring matter may be the source of contamination, while the freezing equipment may be its source in some points. Dippers and scoops were the worst sources of bacteria in retailing, but were more sanitary when kept in running water, especially as regards coliform count. 112 samples had an average count of 60,000 per Gm., and the product from 8 out of 12 manufacturers had an average count less than 10^5 per Gm.—M. W. YALE and R. C. HICKEY. *New York State Agric. Exp. Sta., Tech. Bull.*, No. 248 (1937), 30 pp.; through *J. Soc. Chem. Ind.*, 57 (1938), 580. (E. G. V.)

Catadynized Water—Disinfecting Power of, Toward Foodstuffs. The disinfecting action toward *B. coli* is certain, but requires a sufficient time of contact between the catadynized water and the foodstuffs. In the case of oysters, disinfection is complete in 8 hours and, contrary to chlorine antiseptics, does not affect the taste and other organoleptic characteristics. With fruit and vegetables, 4 hours' contact is generally sufficient to ensure complete destruction of pathogenic germs. The water used contained 260 γ of silver per liter. The number of organisms decreases rapidly: with a salad which contained originally 40,000 to 50,000, the values after 1, 2, 3 and 4 hours' treatment were 30,000, 15,000, 1600 and 300, respectively.—P. E. PERINI. *Ann. Igiene*, 46 (1936), 505–510; through *Chimie & Industrie*, 39 (1938), 152. (A. P.-C.)

Colon Group—Nomenclature for. The terms "*B. coli*," "*E. coli*," "colon," "colon-aerogenes," "coli-aerogenes," "Escherichia-Aerobacter," and "coliform" are commonly employed by various persons to designate a group of organisms defined as including "all aerobic and facultative anaerobic Gram-negative non-spore-forming bacilli which ferment lactose with gas formation." For the purpose of clarifying the confusion caused by these various terms when used by different persons to designate the same or different groups of bacteria, the authors recommend the term "coliform" to designate the lactose fermenting aerobic bacteria used as a measure of the pollution of water. The Aerobacter and Citrobacter groups indicate a less dangerous type of pollution, but both are found in the human intestines and soil. The presence of coliform organisms in pasteurized milk indicates faulty pasteurization. Since it has recently been shown that typhoid bacilli may persist longer than coliform organisms in water treated with chlorine or chloramine, a reconsideration of the use of the coliform group as the index of the safety of a potable water supply is indicated.—R. S. BREED and J. F. NORTON. *Am. J. Pub. Health*, 27 (1937), 560. (T. C. G.)

Diphtheria. The symptoms and the therapy of diphtheria are considered in detail. The importance of an early treatment with serum is stressed.—O. ROSTOKI. *Munch. med. Wochschr.*, 85 (1938), 434; through *Am. J. Pharm.*, 110 (1938), 210. (A. C. DeD.)

Diphtheria and Tetanus—Combined Active Immunization for. The clinical value of active immunization for diphtheria and for tetanus has been definitely established. It was demonstrated that a mixture of diphtheria and tetanus toxoids produced a higher antitoxin titre for each infection than that produced by a single antigen. In humans such mixed immunization produced antitoxic immunity to both toxins in apparently no less degree than was obtained by using the two toxoids separately. The routine use of combined active immunization for diphtheria and tetanus, 2 doses of the toxoids being given at a 2-month interval, is advocated.—J. V. COOKE. *Southern M. J.*, 31 (1938), 158; through *Am. J. Pharm.*, 110 (1938), 210. (A. C. DeD.)

Disinfectants—Comparative Study of the Resistance of Different Strains of Oospora to the Action of. Tests carried out on 5 strains of *Oospora* and 5 disinfectants: soda plus sodium chloride, nitric acid plus potassium nitrate, sodium hypochlorite plus sodium hydroxide, formaldehyde and carbolic acid, showed considerable variation in the resistance of the different strains. The sodium hypochlorite plus sodium hydroxide mixture was the most efficient disinfectant; and formaldehyde also gave fairly good results.—H. DAM and H. WENDT. *Latte Latticini*, 13 (1936), 115–120; through *Chimie & Industrie*, 39 (1938), 157. A. P.-C.

Disinfectants—Evaluation of. The technic of determining phenol coefficients is discussed and various modifications are suggested. *B. coli*, *B. pyocyaneum* and *Staphylococcus* are recommended as organisms. The Rideal-Walker technic is criticized.—E. GOTTSACKER. *Zentr. Bakt. Parasitenk.*, I 139, (1937), 70–82; through *J. Soc. Chem. Ind.*, 57 (1938), 323. (E. G. V.)

Food Poisoning—Relation of Staphylococci to. The author gives a complete review of the essential facts known about food poisoning caused by staphylococci. Prior to 1930 Salmonella organisms were thought to be the only organisms capable of causing a mild type of food poisoning. Now it is recognized that staphylococci from a variety of sources produce an enterotoxin which causes nausea, abdominal cramps, vomiting and diarrhoea after an incubation period of four to six hours. The foods most commonly incriminated are custard filled pies, cream puffs, eclairs, milk, ice cream, cheese, gravy, etc. Only certain strains of staphylococci produce the enterotoxin, but no morphological, cultural, serological or biochemical characteristics have been found to identify the food poisoning strains. Since staphylococci are ubiquitous, there is no practical method of excluding them from foods; but food poisonings can be prevented by keeping the foods at a low temperature until they are eaten to inhibit the growth and toxin formation of the organisms.—G. M. DACK. *Am. J. Pub. Health*, 27 (1937), 440. (T. C. G.)

Gonococcal Antitoxin in Gonorrhœa. The serum described as "gonococcal antitoxin" appears to have no specific anti-gonococcal effect. It appears to delay the development of the active immunity essential to recovery from gonorrhœa without substituting any compensatory passive immunity. Its use in gonorrhœa is inadvisable on account of its lack of therapeutic value, its serious side-effects, its frequent interference with recovery and possibly also the risk of its rendering patients liable to suffer from serious allergic reactions in the event of their requiring at some future date treatment with antitoxic sera for other bacterial infections.—E. T. BURKE, J. GABE, A. H. HARKNESS and A. J. KING. *Brit. Med. J.*, 4028 (1938), 605. (W. H. H.)

Hydrogen Sulfide—Detection of, in Cultures. In acid medium soluble bismuth compounds are more sensitive for the detection of hydrogen sulfide than iron compounds. A satisfactory medium for the study of bacteria which produce hydrogen sulfide is prepared as follows: 7 Gm. tryptone, 0.3 Gm. K_2HPO_4, 5 Gm. agar, 1000 cc. water, 10 cc. 20% sodium sulfite, 5 mg. mannitol and 5 cc. bismuth liquor (I). I contains 3 Gm. bismuth citrate in 100 cc. water and approximately 1 cc. ammonium hydroxide (sp. gr. 0.90). On this medium 38 dysentery cultures, 24 out of 25 *S. paratyphi* cultures and 8 *S. schottmulleri* cultures produced hydrogen sulfide. With the last cultures the blackening was much more marked than on media containing lead or iron indicators.—CHARLES A. HUNTER and H. GILBERT CRECELIUS. *Proc. S. Dakota Acad. Sci.*, 17 (1937), 23; through *Chem. Abstr.*, 32 (1938), 2165. (F. J. S.)

Ice Cream—Survival of Pathogenic Organisms in. *Salmonella enteritidis* and *Br. abortus* survived storage in ice cream at −23.2° for 7 years. *M. tuberculosis hominis* and *bovis* survived for $6^1/_2$ years. Other types survived for over 4 years.—G. I. WALLACE. *J. Dairy Sci.*, 21 (1938), 35–36; through *J Soc. Chem. Ind.*, 57 (1938), 580. (E. G. V.)

Irradiated Substances—Destruction of Air-Borne Bacteria by. The peroxide content of many essential oils and terpenes before and after irradiation with ultra-violet light is studied. Bactericidal action increases with peroxide content, but is not dependent upon it, as many of the oils themselves have bactericidal properties.—H. BECHHOLD. *Z. Hyg.*, 119 (1937), 193–212; through *J. Soc. Chem. Ind.*, 57 (1938), 224. (E. G. V.)

Lipo-Proteidic Complexes in Serum—Studies of. Owing to the importance of lipo-proteidic complexes in the serum-structure and to the critical modification of certain chemo-physical serum-constants at 56°, the author has studied the action of the temperature upon the links binding lipids and proteids in lipo-proteidic complexes. The technic employed has enabled the author to carry out a rather thorough investigation on the serum structure considered from this new point of view; namely, the possibility of a fractional extraction of lipids with mixtures of alcohol and with ether containing alcohol in gradual increasing degree. The results recorded (decrease of lipids which may be extracted in serum heated at 54° during 30 minutes) lead to an additional element in the knowledge of the chemo-physical individuality of serum at 56° at which it loses its complementary activity thus changing its serological and chemo-physical individuality. —L. MARFORI. *Biochim. terap. sper.*, 16 (1938), 116. (A. C. DeD.)

Liquid-Sterilizing Apparatus. The main liquid is passed through an injector. The dosing liquid is induced into the throat, and its quantity regulated by dilution with ingoing main liquid.—E. HEITZMANN. U. S. pat. 2,065,583; through *J. Soc. Chem. Ind.*, 57 (1938), 334. (E. G. V.)

Meningococcic Endotoxin—Properties of, Obtained by the Method of A. Boivin. By this method of precipitating with trichloracetic acid, A. Boivin has been able to extract from a large number of bacteria a substance which represented the endotoxin and the complete antigen of these organisms. The author applied this method of study to the meningococci, he prepared trichloracetic extracts of three types of meningococci A, B, C, and with these extracts brought about the reactions of precipitation, the toxicity tests and the antigenic researches. The method of A. Boivin permits the isolation of a specific endotoxin not only for a specific species, but for each variety of meningococci A, B or C. This endotoxin possessed *in vivo* antigenic properties that only the stock of recently isolated organisms have given a toxic extract.—J. CHEVE. *Presse méd.*, No. 37 (1938), 737. (W. H. H.)

Molecular Composition of Specific Immune Precipitates from Rabbit Sera. A summarization of data on the molecular composition of the specific immune precipitate at certain reference points or zones in the reaction range of fine antigen-antibody systems, and a discussion of several generalizations supported by the data.—MICHAEL HEIDELBERGER. *J. Am. Chem. Soc.*, 60 (1938), 242. (E. B. S.)

Organism Causing Spoilage in Fortified Sweet Wines—Characteristics of. The organism forms sediments varying from granular to flocculent and composed of long, slender, intertwined filaments, more or less segmented. The optimum p_H is 4.1–4.3, the optimum temperature 20–25°, and the ethyl alcohol tolerance 22 volume %. Lactic acid and acetic acid are produced by its growth in wine, and in some cases gas is evolved.—H. C. DOUGLAS and L. S. MCCLUNG. *Food Research*, 2 (1937), 471–475; through *J. Soc. Chem. Ind.*, 57 (1938), 430. (E. G. V.)

Piroplasmosis—Chemotherapy of. The action of compounds which liberate active oxygen (peroxide of hydroquinine, peroxide of urea, hydrogen peroxide) was tried on virulent strains of Piroplasma. In no case could animals be rendered entirely parasite-free.—M. OESTERLIN. *Zentr. Bakt. Parasitenk.*, 137 (1936), 419-423; through *Chimie & Industrie*, 39 (1938), 122. (A. P.-C.)

Poliomyelitis—Experience with Picric Acid-Alum Spray in Prevention of, in Alabama, 1936.—Armstrong and Harrison previously demonstrated that after various chemicals were sprayed on the nasal mucosa of monkeys and mice, these animals were protected from poliomyelitis or encephalitis when these viruses were subsequently sprayed intranasally. A solution consisting of 0.5% picric acid and 0.5% sodium aluminum sulfate in 0.85% sodium chloride was found to be the most effective of the 150 or more solutions tested. In the summer of 1936 a field trial of this picric acid-alum spray was made in two counties in Alabama. A total of 2076 families numbering 8093 persons, 62% of whom had been sprayed one or more times, were canvassed to determine the efficacy of the spray in preventing poliomyelitis. The results indicated that the incidence of poliomyelitis in the sprayed group was somewhat less than the calculated incidence based upon the

rate in the unsprayed, control group (16 sprayed to 21.7 unsprayed). Complaints of headache, nausea, burning sensation, etc., from the spray occurred in 20.8% of those sprayed.—C. ARMSTRONG. *Am. J. Pub. Health*, 27 (1937), 103. (T. C. G.)

Preservatives, with Special Reference to Esters of Hydroxybenzoic Acid. p-$OH \cdot C_6H_4 \cdot CO_2 \cdot C_2H_5$ (I), in concentrations of 0.09% prevents growth of bacteria and molds, does not affect the taste or odor of foodstuffs or the medicinal value of herb extracts, and is not toxic to mammals. The bacteriostatic action of the methyl ester is smaller, and it imparts an unpleasant taste to foodstuffs. The low solubility of the propyl ester prevents its use as a preservative. I is preferred to any other preservative.—D. J. TILGNER and J. SCHILLAK. *Przemysl Chem.*, 21 (1937), 329–346; through *J. Soc. Chem. Ind.*, 57 (1938), 453. (E. G. V.)

Silver Treatment of Water and Beverages—Public Health Aspects of. Various silver products have been recommended by commercial interests for the sterilization or pasteurization of water, foods, beverages, etc., based on the well-known principle of the oligodynamic action of silver and its compounds. It was found that silver melted in the air and cooled in hydrogen had no germicidal effect; while silver melted in hydrogen or air and cooled in air was germicidal, indicating that only silver oxide was germicidal. In the presence of peptone or grape juice, silver nitrate, silver oxide and colloidal silver showed a marked reduction in bactericidal activity. Strawberry, tomato, cherry, apple, etc., juices, treated by commercial silver processes, were not found to be germicidal for *E. coli*. Since little is known of the physiological effects of ingested silver, public health officials should carefully consider the risk involved before approving of the use of silver or its compounds for the treatment of foods and beverages.—J. GIBBARD. *Am. J. Pub. Health*, 27 (1937), 112. (T. C. G.)

Sodium Chloride and Other Salts—Antiseptic Power of Solutions of. The antiseptic power is expressed as log N/n, where N is the number of organisms present in a culture medium containing no salt and n the number in the same medium to which a definite salt concentration has been added. The order of diminishing antiseptic power at molecular concentration was potassium carbonate, sodium sulfite, magnesium sulfate, sodium sulfate, sodium chloride. A saturated solution of sodium chloride was more antiseptic than one of sodium sulfate or magnesium sulfate. The orders of antiseptic and dehydrating power were the same. Sulfate is more antiseptic than chloride. Potassium carbonate owes its power to hydroxyl ions.—P. CHAMBARD and R. GARNOT *J. Soc. Leather Trades Chem.*, 21 (1937), 643–653; through *J. Soc. Chem. Ind.*, 57 (1938), 462. (E. G. V.)

Streptococci—Aroma, New Method for Isolation of. Curdled milk showing a positive aroma reaction is selected, and, after inoculating on litmus milk, types showing vigorous acid production are inoculated into sterile milk and those showing consistent aroma production are used as starters. In this way, only 12–20% of selected types were suitable. Propagation is best done in pasteurized milk of good hygienic quality.—K. VAS and J. CSISZAR. *Proc. XIth Worlds Dairy Cong., Berlin*, 2 (1937), 118–121; through *J. Soc. Chem. Ind.*, 57 (1938), 581. (E. G. V.)

Sulfanilamide—Bacteriostatic Action of, upon Meningococcus in Spinal Fluid. Sulfanilamide exerts a bacteriostatic effect on meningococcus present in the spinal fluid obtained from patients with meningitis.—ERWIN NETER. *Proc. Soc. Exptl. Biol. Med.*, 38 (1938), 37. (A. E. M.)

Termobacteria and Acetic Bacteria. The termobacteria, which are weakly acid-producing, show varying degrees of resistance to ethyl alcohol, which in sufficient concentration may delay the onset of multiplication without necessarily causing complete inhibition. Acclimatization of these bacteria is possible, but ethyl alcohol is not assimilated. Certain relatively strongly acid-producing bacteria prove to be facultatively anaerobic acetic bacteria. The acid production decreased with increasing ethyl alcohol concentration.—H. SCHNEGG and K. WEIGAND. *Z. ges. Brauw.*, 61, Nos. 1 and 2 (1938); through *J. Soc. Chem. Ind.*, 57 (1938), 573. (E. G. V.)

Tubercle Bacilli—Lethal Effect of Several Acids and Alkalies on. Hydrochloric acid in three to five times normal concentration kills tubercle bacilli in 5 minutes, while a 1% solution requires 24 hours. The addition of half normal sodium thiocyanate to the hydrochloric acid increased its lethal effect 60 to 400 times. Decinormal thiocyanic acid alone killed in 5 minutes, twentieth normal in 30 minutes, and two hundredth normal in 24 hours. Sulfurous acid has the same power as thiocyanic acid. Sodium hydroxide of eight times normal concentration kills in 24 hours, at a 9 to 11.5 times normal concentration it kills in 4 hours.—G. LOCKEMANN and K.

HEICKEN. *Zentr. Bakt. Parasitenk.*, 139 (1937), 500–506; through *Chimie & Industrie*, 39 (1938) 122. (A. P.-C.)

Tubercle Bacillus—H-37 Human, Chemical Studies of the Dissociants of. The working hypothesis on which this investigation is based is that virulence is a quantitative factor and depends on the relative amount of some constituent present. It was found that the virulent variant contained nearly twice as much lipoidal material as the avirulent variant. The media also showed differences in nitrogen utilization.—GUSTAVE J. MARTIN. *J. Am. Chem. Soc.*, 60 (1938), 768. (E. B. S.)

Typhoid Vaccine—Occurrence of O and H Agglutinins following Subcutaneous and Oral Administration of. Since there is considerable conflicting evidence regarding the value of oral vaccination against typhoid fever, these workers made a study to compare the agglutinin response following the subcutaneous and oral administration of typhoid vaccine. Commercial T. A. B. was used for the three weekly subcutaneous injections and a capsule of bile followed by three capsules of Typhoral on three successive days was employed for the oral immunization. Students were bled before and four to five weeks after completion of the immunization to determine the titre of the H and O agglutinins in their sera. The results in general showed that subcutaneous immunization produced H titres of 0 to 1:40 and 0 titres of 1:40 to 1:320; while the oral immunization produced O titres of 0 to 1:20 and H titres of 0 to 1:160.—C. M. DOWNS and G. C. BOND. *Am. J. Pub. Health*, 27 (1937), 889. (T. C. G.)

Typhoid Vaccine—Protective Antibodies in the Blood Serum of Individuals after Immunization with. A study was made to obtain a strain of the typhoid bacillus which would produce a more effective vaccine than the Rawling's strain that has been used by the United States Army Medical Corps for many years. Formalized and heat-killed vaccines were prepared from two recently isolated strains (Nos. 58 and 1-I) and their immunizing value compared with the Rawling's vaccine by mouse protection tests. Strains Nos. 58 and 1-I had previously been found to possess far greater virulence (75–100 million organisms killed mice in 72 hours) than the Rawling's strain (400 million organisms required to kill mice in 72 hours). By suspending the organisms in 6% mucin, 100–1000 bacilli of strain Nos. 58 or 1-I killed 18 Gm. Swiss or the C-7 strain of black mice in 72 hours. Specimens of blood serum were taken from 277 individuals before and two weeks after injection with the various vaccines prepared. The protective power of these sera, and consequently the effectiveness of the vaccines, was tested by injecting 0.1 cc. of the sera intraperitoneally into susceptible mice, together with graded doses of virulent typhoid bacilli suspended in mucin. Over 13,500 mice were used in these protection tests. Sera from individuals immunized with the vaccine prepared from strain No. 58 gave considerably more protection than vaccines made from the less virulent strains. Heat-killed vaccines (56° C. for 1 hour) gave equally as good protection as formalized (0.1%) vaccines. On the basis of this work, the United States Army is now using strain No. 58 in place of the Rawling's strain for the preparation of typhoid vaccine.—J. F. SILER. *Am. J. Pub. Health*, 27 (1937), 142. (T. C. G.)

BOTANY

Botany and Perfume of the Members of the Orchid Family of Central Europe. A review.—ANON. *Riechstoff-Ind. Kosmetik*, 13 (1938), 23–26. (H. M. B.)

Derris and Mundulea—Biochemical Studies of. I. Histology of Rotenone in Derris Elliptica. Resin-containing cells can be distinguished in sections of derris root by the Durham test. Rotenone first occurs in small cell groups in the secondary cortex opposite the protoxylem when the plant is 6 weeks old. It gradually spreads throughout the xylem, parenchyma and cortex. Starch and rotenone do not occur in the same cell. In the mature root, all the xylem parenchyma probably contains either starch or rotenone. Toxic substances other than rotenone, probably occur in the same cells as the rotenone. The cells which contain rotenone are apparently unspecialized morphologically.—R. R. LE G. WORSLEY and F. J. NUTMAN. *Ann. Applied Biol.*, 24 (1937), 696; through *Chem. Abstr.*, 32 (1938), 2175. (F. J. S.)

Fats in Plant Tissues—Sudan IV as a Microchemical Test for. A stock solution is prepared by adding 2 Gm. of the dye to 1000 cc. of absolute alcohol and then gently refluxing the mixture until all the powder has dissolved. For staining sections, 7 parts of the stock solution are mixed with 9 parts of 45% alcohol. The sections are first placed in 50% alcohol for 1.5 hours and then are transferred to the Sudan IV solution where they should remain at least 3 hours at ordinary

room temperature. They are then removed to 50% alcohol for 3 minutes, washed in distilled water for 30 minutes, counterstained in Mayer's hemalum for at least 3 hours, washed in alkaline tap water and mounted in glycerol.—E. BARTON-WRIGHT. *Ann. Botany*, 2 (1938), 255; through *Chem. Abstr.*, 32 (1938), 3785. (F. J. S.)

Hormones—Plant Growth. A lecture.—F. KOGL. *Chemistry and Industry*, 57 (1938), 49–55. (E. G. V.)

Insecticides—Methods and Equipment for Laboratory Studies of. Equipment for the culture of insects and plants is described.—H. WATERS. *J. Econ. Entomol.*, 30 (1937), 157–203; through *J. Soc. Chem. Ind.*, 57 (1938), 567. (E. G. V.)

Neutrons—Fast, Effect of, on Dry Seeds. The bombardment of dry seeds of certain species by stray neutrons had no effect on germination, whereas in other species it caused a decrease in germination directly proportional to the duration of exposure. Seedlings and mature plants grown from the neutron-bombarded dry seeds showed a number of morphological variations from normal.—ROY MILTON CHATTERS. *Science*, 87 (1938), 262; through *Chem. Abstr.*, 32 (1938), 3789. (F. J. S.)

Plant Cell Walls—Development of. Review of knowledge obtained by morphologic, chemical and X-ray examination of cells of such plants as cotton.—W. WERGIN. *Umschau*, 41 (1937), 987; through *Chem. Abstr.*, 32 (1938), 2983. (F. J. S.)

Provitamin D—Vegetable. The provitamin D content of various plant sterols is given. Ergosterol is isolated and identified from cottonseed oil and scopolia root sterols.—A. WINDAUS and F. BOCK. *Z. physiol. Chem.*, 250 (1937), 258; through *Chem. Abstr.*, 32 (1938), 2174. (F. J. S.)

Selenium as a Stimulating and Possibly Essential Element for Certain Plants. Selenium, as sodium selenite, has a marked stimulating effect on the growth of *Astragalus racemosus*. It may be essential for the development of this and other species of selenium-indicator plants, and appears to be unique among the essential elements in being required by only a few species of the higher plants in the *Leguminosæ*, the *Compositæ* and the *Cruciferæ*.—S. F. TRELEASE and H. M. TRELEASE. *Science*, 87 (1938), 70–71; through *J. Soc. Chem. Ind.*, 57 (1938), 560. (E. V. G.)

Soil Water and Its Relation to Plants.—A review. S. HENIN. *Ann. agron.*, 6 (1936), 723–741; through *J. Soc. Chem. Ind.*, 57 (1938), 559. (E. G. V.)

Viruses—Nature of. Microörganisms or Chemical Substances? The view which has long been held that viruses are living organisms, similar to, but smaller than bacteria, may have to be modified as the result of recent work on virus diseases, especially those attacking plants. One theory holds that some protein contains virus as an impurity, while another holds that the mass of evidence against the suggestion that protein contains virus as impurity is now so large that it may be disregarded. Arguments in favor of the identity of protein and virus are: The proteins cannot be isolated from healthy plants; the amount isolated is proportional to the infectivity of the sap; infected plants contain specific antigens which are identical with the proteins isolated and the serological titres are of the same order as those of other purified antigens; proteins isolated from a plant infested with a potato virus are much less stable than some other proteins obtained, and the virus itself is similarly more easily destroyed.—ANON. *Pharm. J.*, 140 (1938), 208. (W. B. B.)

Vitamin C—Effects of Light on the Production of. Rice seeds germinated for 10 days under electric light contained more vitamin C than those germinated in the dark. This was especially noticeable when the seeds were fertilized. When barley was protected from light till it extended to the height of 1 mm., the vitamin C content was one-fourth of that of barley grown in sunlight. The same fact was proved for the radish. The vitamin C content of the fruits of "unshu" orange covered from the light was inferior to that of the uncovered. Though vitamin C in the plant body was produced in the dark, its content was markedly affected by light.—T. MATSUOKA. *J. Agric. Chem. Soc. Japan*, 12 (1936), 160–161; through *Chimie & Industrie*, 39 (1938), 122–123. (A. P.-C.)

Vitamin C in Germinating Seeds. The various varieties of leguminous plants tested, form more vitamin C on germination than do cereals. The cotyledons of leguminosæ even if deprived of their radical can form vitamin C, while the endosperm of cereals is devoid of this power. The energy of respiration in the plants is well coördinated with storage of the vitamin. The data confirm the opinion that vitamin C is a carrier of H from substances burned toward O, *i. e.*, it takes

direct part in the respiratory act.—K. L. POVOLOTSKAYA. *Compt. rend. acad. sci. U. R. S. S.*, 17 (1937), 35 (in English); through *Chem. Abstr.*, 32 (1938), 2173. (F. J. S.)

Water as a Growth Factor for Plants. Relations between the critical water content and the supply of soil water to plants are examined. The significance of certain physical properties of soils, of climatic conditions and the nature of age of the plant is considered.—H. KELLER. *Bondekunde Pflanzenernähr.*, 6 (1937), 37–47; through *J. Soc. Chem. Ind.*, 57 (1938), 421. (E. G. V.)

CHEMISTRY

GENERAL AND PHYSICAL CHEMISTRY

Colorimetry by Means of Colloidal Solutions. Like true solutions, colloidal solutions absorb light. But in addition, they give rise to secondary effects which vary in different cases, due to lateral diffusion of the light by the colloidal particles. This diffusion is of small importance relatively to the main absorption when the particles are very small, *i. e.*, when the solutions are not turbid and produced only a slight Tyndall effect. In order to apply colorimetry to colloidal solutions, a good protective colloid must be added. In this respect, best results are obtained with gelatin, provided it is very pure. It permits of increasing the accuracy of numerous known colorimetric methods.—R. JUZA and R. LANGHEIM. *Angew. Chem.*, 50 (1937), 255–260; through *Chimie & Industrie*, 39 (1938), 248. (A. P.-C.)

Committee on Atomic Weights of the International Union of Chemistry—Eighth Report of. The committee on atomic weights of the International Union of Chemistry, in their eighth report covering the period September 30, 1936, to September 30, 1937, have made the following changes in the table of atomic weights: Hydrogen, from 1.0078 to 1.0081; Helium, from 4.002 to 4.003; Carbon, from 12.01 to 12.010; Molybdenum, from 96.0 to 95.95; Erbium, from 167.64 to 167.2; Tungsten, from 184.0 to 183.92; Osmium, from 191.5 to 190.2—G. P. BARTER, O. HÖNIGSCHMID and P. LEBEAU. *J. Am. Chem. Soc.*, 60 (1938), 737. (E. B. S.)

Emulsions and Dispersions. A lecture.—R. J. JOHNSON. *Oil Colour Trades J.*, 92 (1937), 1923–1928; through *J. Soc. Chem. Ind.*, 57 (1938), 466. (E. G. V.)

Organic Solvents—Line Coördinate Chart for Vapor Pressure of. It is possible to read directly from the chart the vapor pressure of any of the following high boiling, organic solvents at varying temperatures: benzyl acetate, benzyl alcohol, butyl carbitol, carbitol, declain, dibutyl phthalate, dimethyl phthalate, hexalin, terpineol and tetralin.—D. S. DAVIS. *Ind. Eng. Chem.*, 30 (1938), 320–321. (E. G. V.)

Paraffin—Liquid, Viscosity of. The Redwood viscometer, an instrument recommended by the British Pharmacopœia, for the determination of viscosity of liquid paraffin, has certain disadvantages. For instance, the tube through which efflux occurs is a short one, the liquid discharges into the air, and it is difficult to maintain a steady temperature throughout the bulk of the liquid under test. Further, there is an appreciable difference between the temperature of the liquid at the top of the short efflux tube and that at the bottom of the tube where the liquid is in contact with the atmosphere which affects samples of different viscosity differently. To eliminate these errors the Addendum 1936 requires the viscosity of liquid paraffin to be determined in a U-tube viscometer, the viscosity being then obtained in absolute units instead of in the empirical Redwood seconds. An improved method of determining the viscosity of liquid paraffin is given, wherein a calibrated U-tube instrument is used. The instrument measures the dynamic viscosity coefficient. The following equation is used in the calculation of results: $V = Kts$, where K is a constant for the instrument, and its value depends on the radius of the capillary tube, its length, and the volume of liquid above the capillary at the beginning of the experiment, t is the time of flow, in seconds, and s is the density of the liquid under test. The ratio of the two constants of the liquid—the dynamic viscosity coefficient and the density of the liquid—gives a new constant which is directly proportional to the time of flow of the liquid in the viscometer. This is termed the kinematic viscosity coefficient. An illustration of the calibrated instrument is given. —ANON. *Pharm. J.*, 140 (1938), 570. (W. B. B.)

Soap—Physico-Chemical Analysis of. The significance and the measurement of surface tension, p_H, and foaming properties are discussed.—H. FLAMMER. *Fette u. Seifen*, 45 (1938), 133–137; through *J. Soc. Chem. Ind.*, 57 (1938), 544. (E. G. V.)

Specific Gravity Determination—Approximate. The method involves weighing the object to 0.01 Gm. and subsequently measuring its bouyancy directly in distilled water at room temperature by the hydrometer-like apparatus described.—J. G. WAUGH. *Ind. Eng. Chem., Anal. Ed.*, 30 (1938), 209–211. (E. G. V.)

Specific Gravity of Some Pharmaceutical Preparations as Means of Determination of Their Percentages. V. and Y. propose to use specific gravity to determine concentrations with a set of tables and curves, with percentages and specific gravity as coördinates, of potassium iodide, sodium bromide, calcium chloride, sodium salicylate and some others.—G. A. VAISMAN and M. YAMPOLSKA. *Farm. Zhur.*, 3 (1936), 32; through *Chem. Abstr.*, 32 (1938), 3089. (F. J. S.)

Thymol, Phenol, Terpin Hydrate and Menthol—Determination of, in Certain Medicinal Solutions by Surface Tension Methods. The concentration of phenol, thymol, terpin hydrate, menthol, thiocol or resorcinol may be determined from surface tension concentration curves.—M. A. IZMAILOV and O. G. SCHVARTZMAN. *Ukrain. Chem. J.*, 13 (1938), 10–21; through *J. Soc. Chem. Ind.*, 57 (1938) 587. (E. G. V.)

Tsuzuic, Linderic and Obtusilic Acids—Sodium Soap Solution of. The drop number, specific viscosity and specific interfacial tension against kerosene at 20°, 40°, 60° and 80° of 0.25% and 0.5% solutions of the soaps of these acids are recorded. The lathering number, lathering volume and specific volume of the lather after 2 minutes (at 20°) decreases from the C_{14} to the C_{10} soap.—Y. TOYAMA and K. UOZAKI. *J. Soc. Chem. Ind. Japan*, 40 (1937), 349–351B; through J. *Soc. Chem. Ind.*, 57 (1938), 295. (E.G. V.)

Ultracentrifuge and Its Field of Research. A discussion concerning the development of the ultracentrifuge and its applications.—THE SVEDBERG. *Ind. Eng. Chem., Anal. Ed.*, 30 (1938), 113–127. (E. G. V.)

Vessels—Vacuum-Tight, Methods of Rendering. The completed and closed vessel is filled with a medium (I) and dipped in another medium (II) such that they will interact in the pores of any leak and form a solid metallic product, the pressure of II being substantially greater than that of I. For example, I may be formaldehyde vapor, and II may be copper sulfate solution. The use of carbonyls and nitrosyls of iron and nickel is also claimed.—BRITISH THOMSON-HOUSTON CO., LTD. Brit. pat. 479,812; through *J. Soc. Chem. Ind.*, 57 (1938), 471. (E. G. V.)

INORGANIC

Calcium Arsenates—Examination of Commercial. Analytical data are recorded. The commercial product contains 40–47% arsenic petoxide and 30–40% of combined calcium oxide, together with free calcium hydroxide, calcium carbonate and minor impurities. No relation is apparent between the proportion of free calcium hydroxide and the percentage of water-soluble arsenic. Individual brands of calcium arsenate vary considerably in calcium oxide/arsenic pentoxide ratio; wider differences occur between different brands (free calcium hydroxide and calcium carbonate being excluded). Water-soluble arsenic tends to diminish with increase in % of fine particles and with increase in the calcium oxide/arsenic pentoxide ratio. Commercial samples probably contain calcium acid arsenate, water and a basic solid solution of tri- and tetra-calcium arsenates.—O. A. NELSON and C. C. CASSIL. *J. Econ. Entomol*, 30 (1937), 474–478; through *J. Soc. Chem. Ind.*, 57 (1938), 509. (E. G. V.)

Chalk—Reactions on. Nickel, cobalt, bismuth and mercury are identified in the presence of potassium iodide on pieces of chalk under the blowpipe; characteristic colors are produced.—A. P. SERGEEV. *Farm. Zhur.*, 1 (1937), 56; through *Chem. Abstr.*, 32 (1938), 2865. (F. J. S.)

Fumes—Purification of, at the Nikitovo Mercury Plant. The fumes from the plant contain large quantities of mercury and of sulfur dioxide, which contaminate the surrounding atmosphere. The sulfur dioxide can be eliminated by absorbing in dilute ammonia washers and afterward regenerating the sulfur dioxide; the mercury can be retained by means of a slight excess of chlorine gas.—V. A. PYANKOV and M. L. LOEVSKII. *Hig. Trunda*, 14 (1936), No. 6, 57–58; through *Chimie & Industrie*, 39 (1938), 74. (A. P.-C.)

Hydrogen Peroxide—Production of. Production of hydrogen peroxide by aerial oxidation of hydrazo compounds in an inflammable solvent is safely effected at such a temperature that the concentration of vapor in the evolved gas is greater than the upper explosive limit. The oxida-

tion of *p*-hydrazotoluene with oxygen in benzene at 57°, in hexane at 45°, and with air in toluene at 59°, is described.—MATHIESON ALKALI WORKS, Assees. of J. C. MICHALEK and E. C. SOULE. Brit. pat. 479,994; through *J. Soc. Chem. Ind.*, 57 (1938), 511. (E. G. V.)

Scandium—Double Carbonates of. Using specially pure scandium oxide extracted from wolframite at Zinnwald in Czechoslovakia, a number of double carbonates of scandium have been prepared and studied. The existence of $Sc(OH)CO_3.H_2O$, described by Crookes in 1909, was confirmed, but the neutral carbonate $Sc_2(CO_3)_3.12H_2O$, was not obtained from mixtures of scandium salts and ammonium carbonate as described in the literature and its existence must be considered doubtful. A double ammonium scandium carbonate $(NH_4)_2Sc(CO_3)_2.xH_2O$ was, however, isolated, the water content varying between 1.5 and 2 H_2O. Three hydrates of the double sodium salt, $Na_3Sc(CO_3)_4$, with 2, 11 and 18 molecules of water of crystallization have been obtained, but the compound $Na_8Sc_2(CO_3)_7.6H_2O$, mentioned in the literature could not be prepared. Two new double potassium carbonates were isolated and upon analysis were found to possess the formulae $KSc(CO_3)_2.H_2O$ and $K_5Sc(CO_3)_4.5H_2O$. An impure thallium compound was obtained, but its formula was not established. All these salts were shown to be analogous with the double carbonates of the alkali metals and the rare earths.—J. S. STĚRBA-BÖHM and J. P. STĚRBA-BOHM. *Collection of Czechoslovak Chemical Communications* (1938), 8-19; through *Pharm. J.*, 140 (1938), 211. (W. B. B.)

Zinc Chloride—Wet-Chlorination Process for Preparation of. The usual wet process using chlorine gas is simplified for flotation blende by omitting the ferric chloride catalyst, which has otherwise to be removed from the product. The products are zinc chloride solution of arbitary concentration and elementary sulfur. The process, which requires $^1/_4$–$^1/_3$ of the total zinc to be added, as roasted blend, is regarded as solved technically, but as presenting no economic advantage over present practice.—V. PRISTOUPIL. *Chem. Obzor*, 12 (1937), 217-221; through *J. Soc. Chem. Ind.*, 57 (1938), 509. (E. G. V.)

Zinc Oxide—Manufacture of. A review. The development of different methods for the manufacture of zinc oxide is traced historically, and modern methods, including the production of acicular and small particle-size zinc oxide (for rubber compounding), are described. The properties and uses of the different products and the causes of discoloration are discussed.—A. G. ELLIOTT. *Oil Colour Trades J.*, 30, (1937), 466–474; through *J. Soc. Chem. Ind.*, 57 (1938), 509. (E. G. V.)

ORGANIC

Alkaloids

Alkaloid Compounds. Compounds obtained by mixing an alkaloid containing a C_5H_6N ring (nicotine) with kamala, tragacanth, agar-agar, Indian gum or shellac, and drying at 100° are claimed, and in particular "kamala nicotinate, coniinate and dipiperidylate."—F. F. LINSTAEDT. U. S. pat., 2,065,190; through *J. Soc. Chem. Ind.*, 57 (1938), 321 (E. G. V.)

Alkaloids. A report on the use of the term alkaloid, the occurrence of alkaloids in nature, their extraction from plants, and the views of various authors regarding the synthesis of alkaloids in plants. The alkaloids which can be regarded as derivatives of pyrrol are enumerated as hygrine, betonicine, turicine and stachydrine; derivatives of piperidine as trigonelline, piperine, coniine and nicotine. The formulæ of these alkaloids, their occurrence and historical material regarding their synthesis are given.—PAOLA PIRRONE. *Riv. ital essenze profumi piante offic.*, 18 (1936), 83; through *Chem. Abstr.*, 32 (1938), 3904. (F. J. S.)

Alkaloids of Anabasis Aphylla. XIII. The Specific Rotation of Anabasine, Depending on the Methods of Its Isolation from the Plant, the Nature of the Solvent and the Concentration. Partial racemization of anabasine takes place in the process of its isolation by some methods, and this influences the optical rotation. By the method of formation of a nitroso derivative, 59% of a mixture of lupinine and anabasine was isolated as anabasine, boiling under 9mm. pressure at 142° to 143° C., and with specific optical rotation of −47.7°. When anabasine was isolated from sulfuric acid solution of the same mixture by combining it with hydrofluosilicic acid, the mixture shows a specific rotary power of −69.0°; when, instead, it is isolated by the same method from a mixture of alkaloids extracted with dichloroethane, from *Anabasis aphylla* its yield is 0.8% of the weight of the plant and the specific rotation is −81.0°. In methyl acetate anabasine has a specific

rotation of −75.25°; in water it is −29.1° and is lowered with decrease in concentration of anabasine. The same is true for solutions of anabasine in benzene.—S. S. NORKINA, T. NARKOUZIEV and A. Orekhov. *J. Obchtch. Khim.*, 7 (1937), 951–955; through *Chimie & Industrie*, 39 (1938), 313. (A. P.-C.)

Alkaloids in Nerium Oleander L. F. and V. found no alkaloids in the leaves. The neutral ingredient apparently is Shmideberg's oleandrin, a little-known glucoside.—H. FISHER and L. VIDERKO. *Farm. Zhur.* 2(1937), 110; through *Chem. Abstr.*, 32 (1938), 3905. (F. J. S.)

Alkaloids—Simplified Determination of, in Commercial Anabasine Sulfate. Qualitative rections with picric, phosphomolybdic acid and mercuric chloride are described with slides. The alkaloid is distilled from sodium hydroxide and sodium chloride into the standard acid and back titrated.—S. BURKAT. *Farm. Zhur.*, 4 (1937), 228; through *Chem. Abstr.*, 32 (1938), 3905. (F. J. S.)

Androcymbium Gramineum ("Lofout"), a New Colchicine-Containing Plant. *Androcymbium gramineum* MacBridge is a colchicine-containing plant of the southern Sahara. The seeds yield 3.7 Gm. of cochicine per kilo, and the bulbs 2.9 Gm. per kilo. The yield of comparable with that of *Colchicum autumnale* L.—E. PERROT. *Bull. sci. pharmacol.*, 43 (1936), 257–259; through *Chimie & Industrie*, 38 (1937), 1137. (A. P.-C.)

Cocaine—Synthesis of, from Hyoscyamine. A new procedure for the preparation of tropinonecarboxylic esters by the action of carboxylic esters on tropinone is given which runs smoothly at the melting point of metallic sodium or potassium with good yields, and which permits the synthesis of cocain from hyoscyamine and other tropeines through tropine and tropinone. Tropine is obtained simply by heating hyoscyamine with water.—M. N. CHTCHOUKINA, R. A. LAPINA and N. A. PREOBRAJENSKI. *Izvest Akad. Nauk. S. S. S. R. (Sér Chim.)*, (1936) No. 6, 997–1004; through *Chimie & Industrie*, 38 (1937), 740. (A. P.-C.)

Curare—Active Principles of. The author from his study arrived at the following results: curare action is produced by two distinct alkaloids of which he has approximately determined the rough formulas. These two bases, strychnoethaline ($C_{22}H_{27}O_4N$) and curalethaline ($C_{25}H_{30}O_7N$) are found in variable proportions in the examined samples of curare and in the bark of *Strychnos bethalis*. According to their different composition the alkaloids possess the same remarkable physiological action.—M. PAULO. *Presse méd.*, No. 37 (1938), 737. (W. H. H.)

Curare—Alkaloids of. There are three chief varieties of curare, classified according to the manner in which they are packed, in bamboo canes, gourds and earthen pots. Six well-defined alkaloids of curare are known. They may be divided into two groups. To the first group belong curarine, protocurarine and tubocurarine, which are derivatives of quarternary bases; these alkaloids are generally amorphous, yellowish brown to red in color, and water-soluble and are not precipitated from solution by ammonia. The second group, curine, protocurine and protocuridine are tertiary bases, they are crystalline, colorless or only slightly colored, soluble with difficulty in water, precipitated from aqueous solution by ammonia, and less toxic than those of the first group. Curarine, $C_{19}H_{26}ON_2$, the chief source of which is the gourd curare, is obtained by adding ammonia to an aqueous extract of the drug, concentrating the filtrate, precipitating as the chlorplatinate, and liberating the alkaloid with hydrogen sulfide and precipitating the alkaloidal hydrochloride with ether. Physical and chemical properties are given. Protocurarine, $C_{19}H_{23}O_2N$, is not as well known, since it occurs in pot curare of which only small amounts are available. This is the most toxic of the curare alkaloids. It gives a color reaction with dichromate similar to that given by strychnine, but differs in that it does not form crystalline salts. Tubocurarine, $C_{19}H_{24}O_4N$, occurs to the extent of about 10%, together with curine, $(C_{18}H_{19}O_3N)_2$, in bamboo curare. By addition of ammonia to an aqueous extract of the curare, the curine is precipitated and from the filtrate tubocurarine has been isolated. Protocurine, $C_{20}H_{23}O_3N$, and protocuridine, $C_{19}H_{21}O_3N$, occur in the pot curare, the former posssesses slight toxicity but the latter is not toxic. When curare is administered by mouth, even in relatively large doses, no effect is produced, as it is rapidly eliminated in the urine and decomposed by the stomach juices. When given by injection the lethal doses for protocurarine, tubocurarine and curarine are, respectively, 0.00024 Gm., 0.0005 G. and 0.005 Gm. per Kg. of animal.—K. B. Taylor. *Ann. chim. anal.*, 19 (1937), 5, 33; through *Quart. J. Pharm. Pharmacol.*, 11 (1938), 110. (S. W. G.)

Ephedrine—Analytical Reactions for. A review of the known reactions with explanatory notes.—M. PESEZ. *J. pharm. chim.*, 27 (1938), 120–128. (S. W. G.)

Euquinine—Estimation of, per se and in Mixtures. Out of several methods discussed the one recommended for its accuracy is the saponification of euquinine with 0.5*N* sodium hydroxide, the extraction of quinine, and titration.—G. A. VAISMAN and L. G. KOROSTISHEVSKA. *Farm. Zhur.*, 4 (1936), 74; through *Chem. Abstr.*, 32 (1938), 3089. (F. J. S.)

Hexanitrodiphenylamine—Alkaloid Compounds of, and Their Thermal Decomposition. The magnesium salt of 2,4,6,2′,4′,6′-hexanitrodiphenylamine, called Mexan, is known (*Z. ges. Schiess-u. Sprengstoffw.*, 14 (1919), 25). Alkaloids can be precipitated as picrates and set free by addition of mineral acids, but picric acid is somewhat soluble. Hexanitrodiphenylamine is insoluble (0.007%) in water, and by its corresponding use, pure alkaloids can be separated. Limits of precipitation with Mexan are at greater dilutions than with hexanitrodiphenylamine. Mexan is very water soluble. Color reactions of alkaloids with 1% Mexan and 1% picrate solutions are given. If aqueous solutions of cystisine hydrochloride or sparteine hydrochloride are added to an 8% Mexan solution until the supernatant liquid is blood red, then filtered, the precipitate, on washing with cold water, dissolves gradually, the filtrate being orange-red or yellow. However, if the precipitate is dried without washing, it becomes insoluble in water. The cystisine precipitate is difficult crystallized from hot water or alcohol, since it forms a greasy product. Deflagration points of the various Mexan-alkaloid compounds are close together and not characteristic.——LANGHANS. *Nitrocellulose*, 9 (1938), 19; through *Chem. Abstr.*, 32 (1938), 3553. (F. J. S.)

Indicator for Pharmaceutical Investigations—New. A mixture of alizarinsulfonic acid and methylene blue is suitable for investigation of the purity of distilled and twice-distilled water, and for the alkalimetric and acidimetric determinations of alkaloids in drugs. The mixed indicator shows a light green color in acid medium changing to bright violet in alkalies.—ERNÖ PERCS. *Ber. ungar. pharm. Ges.*, 14 (1938), 26; through *Chem. Abstr.*, 32 (1938), 3088. (F. J. S.)

Liquid Extract of Ergot—Assay of. The following procedure is recommended for the separate determination of the water-soluble and water-insoluble alkaloids of ergot in the liquid extract. (*a*) *Determination of Total Alkaloids.*—Place 25 cc. of liquid extract in a Watkins extractor (fitted with a plug of tow in the neck of the extractor to prevent passage of emulsion), make alkaline with ammonia and extract with 100 cc. of anesthetic ether for 6 hours or longer. Transfer the ether solution, together with any aqueous liquid present in the flask, to a separator and extract with 4 successive quantities of 5 cc. of 1% aqueous tartaric acid solution. Warm the mixed acid liquids to remove dissolved ether, dilute to 25 cc. and compare colorimetrically with standard ergotoxine ethanesulfonate solution. (*b*) *Determination of Water-Insoluble Alkaloids.*—Extract 25 cc. of the liquid extract, made alkaline to litmus with ammonia, with three portions of 40 cc. of anesthetic ether. Shake the mixed ethereal solutions with five 40-cc. portions of water, previously made faintly alkaline to litmus with ammonia and saturated with ether. Extract the washed ethereal solution with four 5-cc. portions of 1% tartaric acid solution, warm to remove dissolved ether, dilute to 25 cc. and compare with standard ergotoxine ethanesulfonate solution. (*c*) *Water-Soluble Alkaloids.*—The proportion of water-soluble alkaloids calculated as ergotoxine may be obtained by difference and the result expressed as ergometrine by multiplying by the factor 0.538 (see Hampshire and Page, *Quart. J. Pharm. Pharmacol.*, 9 (1936), 60, for explanation of factor). The extraction of ergometrine from ergot in the preparation of a liquid extract by the method of the B. P. 1914 was shown to be incomplete by modifying the above method to assay the drug.—C. H. HAMPSHIRE and G. R. PAGE. *Quart. J. Pharm. Pharmacol.*, 11 (1938), 57–66. (S. W. G.)

Morphine and Dihydromorphine and Their *N*-Oxides—Ethers of. Various details are given of the production of therapeutic products and intermediates such as methoxymethylmorphine *N*-oxide containing one molecule of acetone of crystallization, methoxymethyl ether of dihydromorphine, a *N*-oxide derivative of the methoxymethyl ether of dihydromorphine, a *N*-oxide derivative of the benzyl ether of morphine, the benzyl ether of dihydromorphine and its *N*-oxide derivative.—LYNDON F. SMALL, assigned to the GOVERNMENT OF THE U. S., represented by the Secretary of the Treasury. U. S. pat. 2,104,058, Jan. 4, 1938. (A. P.-C.)

Morphine and Related Derivatives—Extraction of. Morphine is extracted from opium or other raw materials improved yield by boiling with 5–25% mineral acid (sulfuric acid), extracting the resinous or fatty materials by chloroform, neutralizing with sodium hydroxide, adding ammonium and ether, and extracting with ether-chloroform. Improved yields are obtained owing to destruction of the vegetable structure by the strong acid.—G. E. MALLORY. U. S. pat., 2,062,324; through *J. Soc. Chem. Ind.*, 57 (1938), 226. (E. G. V.)

Nicotine—Oxidation of, with Hydrogen Peroxide. The rate of oxidation is at a maximum in weakly alkaline solution, and is accelerated by addition of dilute aqueous ammonia. Little nicotine is destroyed when tobacco is treated with hydrogen peroxide, rutin, lignins and resins being mainly attacked.—W. PREISS. *Z. Untersuch. Lebensm.*, 74 (1937), 314–318; through *J. Soc. Chem. Ind.*, 57 (1938), 454. (E. G. V.)

Quinine Salts—Solubility and Hydrogen-Ion Concentration of. II. A New Series of Double Quinine Salts. Report is made of the preparation of some new salts. Adding a weak acid to the quinoline nitrogen was tried by a number of methods and these are described. The salts prepared, in which the weak acid is added to the weak nitrogen, were quinine.HCl.acetate, quinine diacetate, quinine.HCl.propionate, quinine.HCl.valerate and quinine.HCl.lactate. The last named is soluble 115 Gm. per 100 cc. of solution with a p_H of 4.13.—FREDERICK F. JOHNSON. *J. Am. Pharm. Assoc.*, 26 (1937), 1231. (Z. M. C.)

Tobacco—Nicotine Content of Hungarian Varieties of. Numerous analyses are recorded.—K. GARTNER and L. BODNAR. *Mezőg. Kutat.*, 10 (1937), 236–247; through *J. Soc. Chem. Ind.*, 57 (1938), 588. (E. G. V.)

Vallesia Dichotoma—Presence of an Alkaloid in. An alkaloid whose hydrochloride exerts a strong histamine type of effect was extracted from this plant.—V. CARCAMO. *Bol. Soc. Quim. Peru*, 2 (1936), 25–26; through *Chimie & Industrie*, 39 (1938), 316. (A. P.-C.)

Essential Oils and Related Products

Essential Oils—Moroccan. Methods are described. Five samples of origanum oil showed the following range in properties: sp. gr. (15°) 0.917–0.940, optical rotation −0°10′ to +0°40′ (one sample too dark for a determination), n(20°) 1.4982–1.5055, phenol content 45.0–62%, soluble in 3 volumes 70% alcohol to 1.5 volumes 80% alcohol. Two samples of thyme oil showed the following constants: sp. gr. (25°) 0.891–0.909, optical rotation −3°12′, n (20°) 1.4909 and 1.4969, thymol content 28 and 37%, soluble in 1.5 and 7 volumes 80% alcohol, respectively.—ERNEST GUENTHER. *Drug and Cosmetic Ind.*, 42 (1938), 304–307, 316. (H. M. B.)

Essential Oils—Composition of, of Ocimum Sp. No. 66 and of F_1 from Crossing of Sp. No. 66 with O. Gratissimum. The essential oils from *Ocimum sp.* No. 66 and its hybrid contain, respectively, linalool 35.5, 20.5; methyl-chavicol 45.6, 56.33; eugenol 8, 10.5; camphor 5, 0.5; α-terpinene 3, 3; β-caryphoyllene 3.3, 6.6; and perillaldehyde 0.15%, traces. It is concluded that the chemical characters of *Ocimum sp.* No. 66 are dominating ones, as none of the components characteristic of *O. gratissimum* are found in the oil from the hybrid.—M. A. ISKENDEROV. *J. Appl. Chem. Russ.*, 10 (1937), 2068–2071; through *J. Soc. Chem. Ind.*, 57 (1938), 589. (E. G. V.)

Eucalyptus Oils—Influence of the Origin on the Composition of Certain. *Eucalpylus amygdalina, E. cordata* and *E. melliodora* grown in southern France yielded less essential oil than the same species growing wild in Australia, and the oils contained much less cineol than the Australian oils. *E. rostrata* grown in France yielded more oil, with a higher cineole content, than in Australia. All the French oils contained slightly more phellandrene than the corresponding Australian oils, but the amount was very small in every case.—H. DEEL and MME. DEEL. *Bull soc. chim. France*, 4 (1937), 79–81; through *Chimie & Industrie*, 38 (1937), 942. (A. P.-C.)

Oakmoss—Concrete Oil of. M. Stoll and W. Scherrer have published an account of a very exhaustive examination of the constituents of the concrete obtained from oak moss (Evernia prunastri) by extraction with ether. The yield varied in the ratio 1:3 in samples of moss obtained in different provinces and the composition was not constant. The odor resides in the neutral portion of the extract which is obtained in very small yield. Accordingly, the authors combined the results obtained by the two methods involving extraction of a small quantity of moss collected from special trees and extraction of large quantities when careful selection was not possible. The crude concretes were separated into a large number of fractions by making use of the chemical and physical properties of the constituents. It was concluded that the odor of the oak moss concrete is due in part to the following compounds: Phenol, orcin, monomethyl ether, thujone, naphthalene, borneol, camphor, cineole, citronellol, geraniol, vanillin, methylnonyl ketone and steric aldehyde. The authors mention that this examination appears to preclude synthetic production of the characteristic odor.—M. STOLL and W. SCHERRER. *Compt. rend. XVII, Congr. Chim. Ind.*, (1937), 205–212; through *Perfumery Essent. Oil Record*, 29 (1938), 176. (A. C. DeD.)

Oil of Juniper. A discussion of the production, gathering and distilling of the oil. The characteristics of two oils were found to be: specific gravity at 25° C. 0.860, 0.859; optical rotation −7°37′, −11°2′; refractive index at 20° C. 1.4780, 1.4770; acid value 0.6, 0.7; saponification value 4.2, 5.8; ester value after acetylation 18.1, 14.0; soluble in 1 or more volumes of alcohol, in 0.5 volume of alcohol, very faintly opalescent with more. The production of Borovicska gin is described.—ERNEST GUENTHER. *Am. Perfumer*, 36 (1938), 42–43. (G. F. W.)

Oil of Peppermint. A discussion of cultivation, distillation and composition of Hungarian peppermint oil. The characteristics of Hungarian oil (I) and Mitcham variety of Hungarian oil (II) were found to be: specific gravity 15° C. I 0.9014–0.9063, II 0.901; optical rotation I −14.41 to −27.52°, II −26.26°; refractive refractive index 20° C. I 1.4610–1.4769, II 1.4619; menthone content I 7.4–14.11%, II 25.8%; menthyl acetate I 5.07–12.8%, II 4.7%; total menthol I 48–71.37%, II 53.3%; free menthol II 49.6%; acid value II 0.6; ester value II 13.2; ester value after acetylation II 170.2; solubility I soluble in 2–4 volumes of 70% alcohol, II soluble in 2.5 volumes of 70% alcohol, slightly opalescent with 3 or more volumes.—E. GUENTHER. *Am. Perfumer*, 36 (1938), 36–37. (G. W. F.)

Violet Flowers—Absolute Oil of. According to R. a commercial sample of violet absolute yielded on steam distillation an oil having d_4^{13} 0.956 $[\alpha_D]$ +8.7°, which was shown to contain a phthalic ester, $C_{13}H_{18}O_4$, absent from specially prepared oils of the leaves and flowers. Oil steam distilled from an absolute of Victoria violets had the constants d_4^{20} 0.896, (α_D) +7.6°, while oil of the leaves had d_4^{21} 0.904 and in various samples $[\alpha_D]$ −2° to +2°. The constants obtained for fractions of the oil of the flowers and the leaves made it impossible to account for the constants recorded by Soden in 1904 for the oil distilled from flowers of violets (d_4^{15} 0.920, $[\alpha_D]$ + 104°). Oil from the flowers contains rather more benzyl alcohol and about the same quantity of nonadienol as the oil from the leaves. However, flower oil contains ten times less nonadienal than the leaf oil, which give the latter its characteristic odor. After hydrogenation small quantities of hexyl alcohol, heptenol and octadienol were isolated but these alcohols may have been formed in the process. According to the author, in any case, it is certain that the oil of flowers of violets contain a certain number of alcohols about identical with those occurring in the leaf oil. Through Girard's reagent a ketone, $C_{13}H_{20}O$, which has been named parmone, has been isolated from the flower oil. This ketone, isomeric with the ionones, approaches the odor of violets themselves more than the ionones, methyl ionones and irone. It is not found in leaf oil and largely accounts for the difference in the oils from the flowers and the leaves.—L. RUZICKA. *Compt. rend. XVII, Congr. Chim. Ind.* (1937), 915–919; through *Perfumery Essent. Oil Record*, 29 (1938), 174. (A. C. DeD.)

Glycosides, Ferments and Carbohydrates

Corn Poppy (Papaver Rhoeas L.)—Coloring Matter of. Extraction of 7.6 Gm. of fresh corn poppy flowers with 2% hydrochloric acid in methanol and purification by precipitation from methanol by ether and also by dilute hydrochloric acid yielded the dark-red coloring matter. Hydrolysis proved the sugar to be a hexose; the acid fraction is *p*-hydroxybenzoic acid; a phloroglucinol could not be isolated. The aglucon is believed to be a pelargonidin with a firmly bound molecule of water. The second coloring principle is thought to be a complex pelargonidin glucoside, for which the name mecopelargonin is proposed.—L. SCHMID and H. KORPERTH. *Monash. Chem.*, 68 (1936), 290–295; through *Chimie & Industrie*, 38 (1937), 1136. (A. P.-C.)

Glucides of Salicaceæ—Analytical Method for the Biochemical Study of. The biochemical test consists in treating the ether solution of the plants successively with invertin, emulsin, rhamnodiastase or any other ferment, and observing the changes in optical rotation and in reducing sugar content. The details of the technic are described.—J. RABATÉ. *J. pharm. chim.*, 24 (1936), 311–325; through *Chimie & Industrie*, 39 (1938), 119. (A. P.-C.)

Glucosides—Manufacture of, from Digitalis Purpurea. The foxglove leaves are extracted at less than 30° with a 4.2% aqueous solution of lead acetate, the extract is treated with a precipitant (sodium sulfate) for the lead, and the filtrate is stripped with chloroform, the latter solution being concentrated at less than 30° *in vacuo* and run into light petroleum to precipitate the pure glucoside.—F. JAGER, assignor to *Rare Chemicals, Inc.* U. S. pat., 2,068, 027; through *J. Soc. Chem. Ind.*, 57 (1938), 456. (E. G. V.)

Isoquercitrin. Glucoside in Tobacco Leaves. The leaves of smoking tobacco contain variable amounts of the glucoside (0.25–1.7%). The sugar part of the molecule is composed of

d-glucose. The aglycone is a yellow colored substance of the flavonol-quercitrin group, $C_{15}H_{10}O_7$.-$2H_2O$. The glucoside isolated in this case was proved to be isoquercitrin, $C_{21}H_{20}O_{12}.4H_2O$, by forming the 5,7,3′,4′ tetramethyl ether and hydrolyzing. This showed that the compound is the quercitrin-3-glucoside.—M. E. KOURILO. *J. pharm. chim.*, 26 (1937), 445–459. (S. W. G.)

Saponin—Expectorant Action of a, (Quillaja Saponaria). The authors do not agree with the work of T. Gordonoff and E. Lüschner who attempted to identify saponis in the lungs and liver following intravenous or oral administration. The identification was carried out by Gordonoff and Lüschner as follows: the chopped organs were heated under a reflux condenser with 70% alcohol, filtered hot and the filtrate evaporated. The residue was taken up in physiological saline solution, filtered and tested for hemolysis with blood gelatin. This procedure, according to the authors, is unsuitable in that the free cholesterol present in the organs binds the saponin and renders it inactive toward red blood cells. The authors established by controls that no saponin could be identified in this manner. Negative results were given in additional studies on the oral administration of saponins to rabbits. The attack on the Gordonoff-Lüschner identification method again brings up the question of the absorption of orally-administered saponin; the correction of the distorted ideas of the harmlessness of small oral doses of saponins appeared weighty to the authors.—L. KOFLER and R. FISCHER. *Z. ges. exptl. Med.*, H1 (1936), 99; through *Scientia Pharm.*, 8 (1937), 54. (M. F. W. D.)

Stearines—Enzymatic Esterification of. The author shows that esterification of cholesterol by means of pancreatic enzymes occurs also if instead of the free acids, their glycerides are used in the reaction. The enzymatic esterification is not specific for the cholesterols but is applicable for other sterols.—A. VERCELLONE. *Biochim. terap. sper.*, 16 (1938), 207. (A. C. DeD.)

Strophanthus Kombé—Glucosides of. A review of the work of Stoll and others showing the chemical inter-relationship of the various glycosides obtained from strophanthus species.—CASPARIS. *Schweiz. Apoth.-Ztg.*, 76 (1938), 85. (M. F. W. D.)

Other Plant Principles

Angico Gum. The gum exuded by Piptadenia closely resembles gum arabic in viscosity and adhesive power, which later increases with the concentration of its aqueous solution.—H. S. SCHNEIDER. *Bol. Inf. Inst. Nac. Tech.*, 2, No. 6, (1937), 7 pp.; through *J. Soc. Chem. Ind.*, 57 (1938), 570. (E. G. V.)

Calumba Root—Bitter Principles of. IV. Hydrogenation of Calumbin and Isocalumbin. Hydrogenation tests showed that calumbin has three double bonds. Of the six oxygen atoms of hydrocalumbic acid, two belong to a carboxyl group and one probably belongs to a hydroxyl group (Tserevitinov reaction); the functions of the three other oxygen atoms could not be determined. Hydrogenation study of isocalumbin gave similar results.—F. Wessely, A. MÜNSTER and K. SCHÖNOL. *Monatsh. Chem.*, 68 (1936), 313–325; through *Chimie & Industrie*, 38 (1937), 1136–1137. (A. P.-C.)

Canada Balsam—Acidity and Optical Rotation of Dried. The authors find that during the removal of the terpenes from Canada balsam changes can occur in the structure of the resinous material. The acidity and the optical rotation of dried Canada balsam depend on the temperature attained in the drying.—A. I. ROBINSON and T. F. WEST. *Quart. J. Pharm Pharmacol.*, 11 (1938), 92–95. (S. W. G.)

Caramel and Humin. It appears from an examination of caramel, which is produced by heating sucrose, that a close connection must exist with the humins. Oxidation with alkaline hydrogen peroxide, the action of halogens and oxidation with nitric acid led to the result, that sugar-humin is a polymerized dehydration product of sucrose, in which the hexose skeleton remains intact. A structural formula for the humin nucleus can be built up on the data so obtained. Caramel appears to be a mixture of humin and iso-saccharosan, in varying proportions, depending on the degree of dehydration. Caramelization begins with the formation of isosaccharosan, which then gives humin directly. The substances described in the literature as caramelan, caramelene and carameline, are not chemical individuals, but mixtures of humin and iso-saccharosan.—A. SCHWEIZER. *Rec. trav. chim.*, 57 (1938), 345. (A. C. DeD.)

Caryophyllene—Constitution of. Further degradation work, directed toward ascertaining the size of the second ring, is necessary for the satisfactory solution of the caryophyllene problem.—H. N. RYDON. *Chemistry and Industry*, 57 (1938), 123. (E. G. V.)

Eugenol—Mercuric Derivatives of. On heating on the water-bath 1 molecule of eugenol and 1 molecule of mercuric acetate, there is obtained on extraction with alcohol needles which melt at 101° to 103° C., and which are soluble in alcohol, glacial acetic acid and 10% sodium hydroxide solution. The compound seems to contain a phenolic hydroxyl group. Its alcoholic solution turns brownish red when treated with ferric chloride. Sodium sulfide produces blackening. Concentrated hydrochloric acid causes the separation of an oily substance, which gives the reactions of eugenol. The mercury content of the product is 40.96%.—T. UKAI and M. HAYASHI. *J. Pharm. Soc. Japan*, 57 (1937), 6; through *Chimie & Industrie*, 39 (1938), 315. (A. P.-C.)

Heterosides and Essential Oils of the Genus Primula. Essential oil of *Primula auricula* L., which is solid, is formed of two odorous products: the methyl ester of 2-hydroxy-5-methoxybenzoic acid, which is present in very small quantites, and mainly 2-hydroxy-4-methoxyacetophenone, or poeonol, which is found in the roots of *Poeonia mouton* Sims. This oil results from the hydrolysis of two heterosides, one of which is primulaveroside and the other is a heteroside which could not be isolated. Essential oil of *Primula acaulis* Jacq., which is liquid, consists of the methyl ester or 2-hydroxy-5-methoxybenzoic acid together with a rather small amount of 2-hydroxy-5-methoxyacetophenone which comes from the hydrolysis of a heteroside. From this species of *Primula* primulaveroside can be obtained pure and free from primeveroside.—A. GORIS and H. CANAL. *Bull. soc. chim. biol.*, 18 (1936), 1405–1424; through *Chimie & Industrie*, 38 (1937), 1138. (A. P.-C.)

Karaya Gum in Nicotine Sprays. The efficiency of nicotine sulfate-soap sprays against aphids was increased by addition of karaya gum (1:500); the minimum effective concentration of nicotine required was lowered to $^1/_3$–$^1/_5$ according to the nature of the soap used.—C. O. EDDY and C. M. MEADOWS. *J. Econ. Entomol*, 30 (1937), 430–432; through *J. Soc. Chem. Ind.*, 57 (1938), 565. (E. G. V.)

Pyrethrum Cinerariaefolium—Pyrethrin I Content of Strains of. Analyses are recorded. The pyrethrin-I content is a satisfactory basis for assessing the toxicity of kerosene extracts of pyrethrum flowers.—R. E. CULBERTSON. *Proc. Am. Soc. Hort. Sci.*, 34 (1937), 590–591; through *J. Soc. Chem. Ind.*, 57 (1938), 319. (E. G. V.)

Quinones—Production of, by "Molds." Synthesis of Spinulosin. The synthesis of spinulosin (3:6-dihydroxy-4-methoxy-2:5-toluquinone) is described, and its structure given.—H. RAISTRICK. *Chemistry and Industry*, 57 (1938), 293–294. (E. G. V.)

Verbenaloside—Acid and Fermentative Hydrolysis of. Different Origins of Carbon Dioxide during the Hydrolyses. The hydrolysis of verbenaloside by diluted sulfuric acid or by emulsin proceeds to the same extent. The carbon dioxide liberated during the acid hydrolysis is formed by the decarboxylation of the heteroside, and may be observed when the reaction is carried out in the absence of air and at a higher temperature than that needed for simple hydrolysis. With emulsin, the carbon dioxide is produced only in the presence of air and corresponds to fixation of oxygen in verbenalol by the action of the enzyme. Other ferments containing a β-glucosidase caused hydrolysis at different rates.—J. CHEYMOL. *J. pharm. chim.*, 27 (1938), 105–120. (S. W. G.)

Fixed Oils, Fats and Waxes

Fat Chemistry. LII. Whale Products in Pharmacy, with Especial Reference of Hydrogenated Whale Fats. The chemistry of sperm-whale blubber and head oils and the chemistry and pharmaceutical uses of spermaceti and cetyl alcohol are reviewed at length, and the possible application of "whale fat," that is, hydrogenated whale oil, in medicine and especially in pharmacy as a component of salves, etc., is discussed.—H. P. KAUFMANN. *Fette u. Seifen*, 45 (1938), 94–104; through *J. Soc. Chem. Ind.*, 57 (1938), 547. (E. G. V.)

Fat Splitting—Different Methods of. The Twitchell, autoclave and Krebitz processes are described, and the Wallace method (hydrolysis in aqueous acetone) and Hoffman process (aqueous saponification under pressure) are outlined.—ANON. *Allgem. Oel-u. Fett.-Ztg.*, 34 (1937), 499–506, 543–548; through *J. Soc. Chem. Ind.*, 57 (1938), 293. (E. G. V.)

Fatty Acids—Chemistry of. III. Properties of Linoleic Acids Prepared by Debromination and by Low Temperature Crystallization, with a Proposed Method of Quantitative Estimation. A comparison of linoleic acid obtained by fractional crystallization of the fatty acids of corn oil at low temperatures from acetone, and of α-linoleic acid prepared by the bromination-debro-

mination process is given. A suggested procedure for determination of the amount of linoleic acid in mixtures of fatty acids is as follows: Weigh a 1.5- to 2.0-Gm. sample of fatty acids into a tared 50-cc. centrifuge tube. Add at once 30–35 cc. of low boiling petroleum ether. Place the tube in an ic-esalt bath and, with constant stirring, add dropwise an excess of bromine. Allow to stand at 0° C. for at least 4 hours and centrifuge. Add 30 cc. of cold petroleum ether, disintegrate the bromides and stir for five to ten minutes in an ice-water bath. Repeat this washing three times. Dry the resultant tetrabromides to a constant weight, and weigh. When pure linoleic acid is brominated in petroleum ether it precipitates 90.6% of its original weight of bromides. Therefore, the per cent of linoleic acid is equal to the per cent of insoluble bromides based on the weight of fatty acids divided by 0.906.—J. B. BROWN and JEROME FRANKEL. *J. Am. Chem. Soc.*, 60 (1938), 54. (E. B. S.)

Fish Oils—New Developments in. A review of American refined and treated fish oils.—L. J. REIZENSTEIN. *Official Digest*, No. 168 (1937), 345–349; through *J. Soc. Chem. Ind.*, 57 (1938), 296. (E. G. V.)

Fish and Aquatic Animal Fats—Refining. Albuminous and mucilaginous substances are precipitated with 0.5% oak-bark extract.—A. SERGEEV. *Maslobo˘ino Zhirovol Delo*, 11 (1935), 551–553; through *J. Soc. Chem. Ind.*, 57 (1938), 401. (E. G. V.)

Mineral Oils—Application of the Grignard Reagent to a Study of. During a chemical and electrical study of oil oxidation, a Grignard reagent (methyl magnesium iodide) was applied as an analytical tool with some success. By using apparatus similar to the "Grignard machine" currently in use for elucidation of the structure of organic compounds, procedures have been devised which permit the determination of minute amounts of water in oil, the establishment of an oxygen balance during oil oxidation, and the approximate prediction of oxidation stability by a single test on the original oil.—R. C. LARSEN. *Ind. Eng. Chem., Anal. Ed.*, 30 (1938), 195–198. (E. G. V.)

Oilseeds—Extraction of. Some of the advantages of the older and simpler types of stationary extraction plant are briefly indicated; a new system of continuous extraction, avoiding the disadvantages of existent systems, is mentioned (without details).—V. MERZ. *Öle, Fette, Wachse*, 1 (1936), 3–5; through *J. Soc. Chem. Ind.*, 57 (1938), 545. (E. G. V.)

Raspberry Oil. The oil from *Rubus idaeus* L. was separated into a solid and a liquid portion. Constants on each portion are reported. A new alcohol ("rubidaeylic") $C_{19}H_{40}O$ was isolated.—H. MARCELET. *J. pharm. chim.*, 26 (1937), 361–366. (S. W. G.)

Tengkawang Fat. The name "Illipé" was originally given exclusively to the seeds of *Bassia latifolia* and *B. longifolia* (*Sapotacæa*), the fat being known as illipé, mowra or mowha fat. In commerce the name illipé has been given to other seeds, in particular tengkawang nuts, which are obtained from various species of *Shorea* (*Dipterocarpacæa*). Tengkawang fat shows a considerable degree of similarity with cocoa butter (comparative constants are tabulated). Tengkawang fat is distinctly harder than cocoa butter. The properties of genuine illipé butter are quite different, and the fat is much softer. Tengkawang fat has a green, yellow or brownish color, and may be odorless or have a cocoa-like odor. Its main use is as a substitute for cocoa butter, and it is specially suitable for chocolate for export to hot countries. It is included in the Dutch Pharmacopœia of 1926 under the name of Oleum Shoreae or Borneo tallow, and is used in pharmacy and cosmetics.—P. A. ROWAAN. *Ber. Afdeel. Handelsmuseum Koninkl. Ver Kolon. Inst.*, No. 113 (1937); through *Quart. J. Pharm Pharmacol.*, 11 (1938), 124. (S. W. G.)

Turtle Oil—Characteristics of. In view of the prominence of turtle oil as a constituent of cosmetics, an account is given of the characteristics of four samples of the crude oil prepared experimentally in Ceylon, namely: Carapace Oil of Leathery Turtle, Dhara Kasbava Oil, Green Turtle, Kanga Mattaya Oil. The characteristics listed for these oils include the moisture content, specific gravity, refractive index at 40° C., acid value, saponification value, iodine value (%), unsaponifiable matter (%).—ANON. *Pharm. J.*, 140 (1938), 295. (W. B. B.)

Waxes—Melting Point Studies of Binary and Ternary Mixtures of Commercial. Melting point-composition diagrams are given for various mixtures of beeswax, paraffin, carnauba, candelilla, Chinese insect, ozokerite and montan waxes.—J. R. KOCH, G. J. HABLE and L. WRANGELL. *Ind. Eng. Chem., Anal. Ed.*, 30 (1938), 166–168. (E. G. V.)

Whale Oil—Chemistry of, and Its Standardization. Information from the literature concerning the analytical characteristics, composition and bio-chemistry of the various whale oils (in-

cluding sperm and Bottlenose oils and whale-milk fat) is collated, and tests for the detection of whale oil, and standards of quality, are discussed.—A. SCHWIEGER. *Fette u. Seifen*, 45 (1938), 64–73; through *J. Soc. Chem. Ind.*, 57 (1938), 547. (E. G. V.)

Unclassified

Amines—Aliphatic, Their Preparation, Properties and Applications. N. MOTOVILOVA. *Prom. Org. Khim.*, 4 (1937), 678–686; through *J. Soc. Chem. Ind.*, 57 (1938), 251. (E. G. V.)

***p*-Aminobenzenesulfonamide—Water Soluble Derivatives of.** The preparation of a number of *p*-amino and *p*-acetylaminobenzenesulfonanilids containing solubilizing groups in the anilide portion of the molecule as well as the preparation of modified alkyl amides of sulfanilic acid is given. The preparation of uraminobenzenesulfonamide is also included. The pharmacology of these compounds is to be reported later.—H. G. KOLLOFF. *J. Am. Chem. Soc.*, 60 (1938), 950. (E. B. S.)

***p*-Aminobenzoic Acid—Alkyl and Dialkylamides of.** The following alkyl and dialkyl derivatives of *p*-nitrobenzamide were prepared: Methyl, ethyl, *n*-propyl, *n*-butyl, *n*-amyl, dimethyl, diethyl, di-*n*-propyl, di-*n*-butyl, di-*n*-amyl and piperidyl. These were reduced by stannous chloride and hydrochloric acid to the corresponding *p*-amino compounds. The monobutyl and amylamide as well as the three higher dialkylamides of *p*-aminobenzoic acid showed strong surface anesthesia on the tongue.—HENRY WENKER. *J. Am. Chem. Soc.*, 60 (1938), 1081. (E. B. S.)

***N*-Aralkylmorpholines.** The syntheses of a number of *N*-aralkylmorpholines are given. The N-benzylmorpholines are local anesthetics. *N*-*p*-brombenzylmorpholine is one-fourth as toxic as procaine, and has practically the same anesthetic effectiveness. The *o*-bromo and *p*-chloro analogs were less efficient. Lengthening of the chain between the benzene and morpholine rings greatly lowered the activity. Only the alkoxybenzylmorpholines showed any topical anesthesia.—MARLIN T. LEFFLER and E. H. VOLWEILER. *J. Am. Chem. Soc.*, 60 (1938), 896. (E. B. S.)

Arsenicals Containing the Furnan Nucleus. III. Some beta- Substituted Furan Arsenicals. Tri-3-furylarsine was obtained when three equivalents of 3-chloromercurifuran were treated with one equivalent of arsenic trichloride in benzene. 2-Carbomethoxy-5-bromo-4-furyldibromoarsine and 2-carbethoxy-5-bromo-4-furyldibromoarsine were also prepared.—WILLIAM W. BECK and CLIFF S. HAMILTON. *J. Am. Chem. Soc.*, 60 (1938), 620. (E. B. S.)

Arsines, Tertiary and Arsine Oxides. The preparation of a number of new tertiary arsines, arsine dihydroxides and arsine oxides is described. Their melting points and the melting points of the mercuric chloride addition products of the arsines are given. The tri-(3-nitrophenyl)-arsine (m. p. 250°) and 3-amino-phenyldi-(3-nitrophenyl)-arsine (m. p. 205°) as previously reported in the literature are shown to be, respectively, the unreduced arsine oxide and tri-(3-nitrophenyl)-arsine.—F. F. BLICKE and E. L. CATALINE. *J. Am. Chem. Soc.* 60 (1938), 419. (E. B. S.)

Arsonium Compounds. The preparation of a number of new arsonium halides by the interaction of a tertiary arsine with an alkyl halide and by the reaction between a tertiary arsine oxide and a Grignard reagent is described. Also the nitrate, sulfate, acetate, bicarbonate and picrate salts of tetraphenylarsonium hydroxide are described.—F. F. BLICKE and E. L. CATALINE. *J. Am. Chem. Soc.*, 60 (1938), 423. (E. B. S.)

Barbituric Acid Compounds—Manufacture of. 5-*iso*-Butyl-, melting point 136°, and -propyl-5-crotylbarbituric acid, melting point 137–138°, prepared in any of the usual ways, have excellent therapeutic properties, notably in reducing reflex super-excitability caused by other barbiturates.—A. CARPMEAL. Brit. pat., 475,948; through *J. Soc. Chem. Ind.*, 57 (1938), 226. (E. G. V.)

Barbituric Acids—1-*n*-Alkyl-5,5-ethyl-isobutyl. Eleven 1-*n*-alkyl-5, 5-ethyl-isobutyl barbituric acids in which the 1-alkyl group ranges from *n*-amyl to *n*-docosyl are prepared and described. The authors found that the size of the *n*-alkyl group on the substituted urea makes little difference in the ease of condensation with the substituted malonic ester; that the solubilities of the eleven acids are such as to make them unsatisfactory for pharmacological work; that the series of compounds offers no promise as hypnotics; and that the hypnotic effect disappears at about the *n*-nonyl compound.—JOHANNES S. BUCK, ALEX M. HJORT, WALTER S. IDE and EDWIN J. DE BEER. *J. Am. Chem. Soc.*, 60 (1938), 461. (E. B. S.)

Barbituric Acids—2-Alkylthio-5-Alkyl- and 2-Alkylthio-5,5-dialkyl. When 5-alkyl-2-thiobarbituric acids are alkylated, 2-alkylthio-5-alkylbarbituric acids are obtained. These on further alkylation yield 2-alkylthio-5,5-dialkylbarbituric acids. 5-Isopropyl-2-methyl-; 5-isopropyl-2-cyclohexanonyl-; 5,5-methylisopropyl-2-allyl-; 5,5-allylisopropyl-2-methyl-; 5,5-isoamylisopropyl-2-methyl and 5,5-ethylisopropyl-2-methylthiobarbituric acids are prepared. They did not show any promise of value as hypnotics.—JOHN LEE. *J. Am. Chem. Soc.*, 60 (1938), 993. (E. B. S.)

Bismuth Allantoinate. A compound suitable for treating external and internal ulcers, wounds, etc., having the formula $C_4H_6N_4O_3.Bi(OH)_2$, which is a white or light yellow powder, is obtained by dissolving allantoin in cold water with the aid of alkali, adding bismuth nitrate, adjusting the p_H to 7, stirring for 5 hours, filtering, washing and drying.—WM. H. ENGELS and GUSTAV A. STEIN, assignors to MERCK & CO. U. S. pat. 2,104,738, Jan. 11, 1938. (A. P.-C.)

Caffeine, Theobromine and Theophylline—Constitution of Certain Derivatives of, Based on Dialysis Studies. The dialysis of the following substances was studied: caffeine, caffeine sodium benzoate, caffeine sodium salicylate, caffeine citrate; theobromine, theobromine sodium benzoate, theobromine sodium salicylate, theobromine sodium acetate; theophylline, theophylline sodium acetate. The dialysis constants for the derivatives of the three bases are the same as for the free bases. No complexes are formed in solution, the compounds existing in simple admixture. The variations in solubilities caused by adding different substances to these bases cannot be explained on the basis of complex formation.—V. NOWATKE. *J. pharm. chim.*, 26 (1937), 481–490. (S. W. G.)

Chlorine—Process for Effecting Bactericidal Action by the Aid of. Water is purified by dissolving in it a urea compound with chlorine.—WM. M. ALLISON. U. S. pat. 2,106,513, Jan. 25, 1938. (A. P.-C.)

Compounds with Hypnotic Properties—Synthesis of. Phenoxymethylhydantoins. The preparation of the following 5-phenoxymethyl-5-alkyl-(or phenyl) hydantoins is given. Where the 5-radical is methyl, ethyl, *n*-propyl, *n*-butyl, *s*-butyl, *n*-amyl, *i*-amyl or phenyl. Also the preparation of 1,3,5,-trimethyl-5-phenoxymethylhydantoin is given. A report of the pharmacological tests will appear elsewhere.—WILLIAM B. WHITNEY with HENRY R. HENZE. *J. Am. Chem. Soc.*, 60 (1938), 1149. (E. B. S.)

Cotarnine Group. IX. Attempts to Synthesize Alkaloids of the Cryptopine Type. When treated with *o*-toluoyl chloride in presence of twice normal sodium hydroxide, cotarnine gives *o*-toluoylcotarnine, which is converted by known methods into the oxime and the semi-carbazone. *p*-Nitro-*o*-toluoylcotarnine is obtained from *p*-nitro-*o*-tolunitrile by condensation with cotarnine in presence of twice normal sodium hydroxide and toluene. With 5-nitrophthalide and acetic anhydride, cotarnine gives anhydroacetyl cotarnine-5-nitrophthalide; finally, with methylanthranilate it gives anhydrocotarninomethyl anthranilate.—B. B. DEY and MISS P. L. KANTAM. *J. Indian Chem. Soc.*, 14 (1937), 144–150; through *Chimie & Industrie*, 38 (1937), 1146. (A. P.-C.)

Cresols—β-Methyl Butyl. A cresol derivative of high germicidal value and of low toxicity in the presence of blood serum, and completely soluble in dilute alkali, has the following formula: $CH_3C_6H_3(OH)CH_2CH(CH_3)CH_2CH_3$.—GEO. W. RAIZISS and LEROY W. CLEMENCE, assignors to ABBOTT LABORATORIES. U. S. pat. 2,106,760. Feb. 1, 1938. (A. P.-C.)

Diazo Coupling and Carcinogenic Hydrocarbons. Indications of a rough parallelism between the reactivity of an aromatic hydrocarbon in the coupling reaction with *p*-nitrobenzenediazonium chloride and the carcinogenic activity suggest a possible association of this type of chemical response and hydrocarbon carcinogenesis. This highly specific chemical reactivity was shown by 3,4-benzpyrene, methylcholanthrene and certain derivatives of aceanthrene.—LOUIS F. FIESER and WILLIAM P. CAMPBELL. *J. Am. Chem. Soc.*, 60 (1938), 1142. (E. B. S.)

β′-Diethylaminoethyl-β-Aminocrotonate. The preparation of β′-diethylaminoethyl-β-aminocrotonate, a vinylog of procaine, is given. Physiological tests showed it to have no anesthetic activity. The authors suggest two possible explanations: (*a*) the compound tautomerizes or (*b*) hydrolyzes to the keto ester. Either would change the structural set-up which seems necessary for local anesthetic action.—R. L. SHRINER and LOUIS S. KEYSER. *J. Am. Chem. Soc.*, 60 (1938), 286. (E. B. S.)

Diethylaminoethyl *N*-phenyl-*l*-naphthylamine-*N*-carboxylate. This compound, a local anesthetic, is made by the interaction of phenyl-α-naphthylcarbamyl chloride and sodium diethylaminoethylate in an inert solvent such as xylene. It melts at 60° to 61° C. Similarly, other compounds such as *N*-phenyl-*l*-naphthylamine-*N*-carboxylates of 1,3-bis(diethylamino)propan-2-ol and 1,3-bis(dimethylamino)-2-ethylpropan-2-ol and salts thereof may be produced. Salts such as the hydrochloride, sulfate, phosphate, acid citrate or tartrate are suitable for medicinal purposes.—RANDOLPH T. MAJOR and ALBERT V. BOESE, assignors to MERCK & Co. U. S. pat. 2,104,753, Jan. 11, 1938. (A. P.-C.)

Dihydroxyoestrine—New Aliphatic Esters of. Compounds of the dihydroxy-oestrine series are converted by aliphatic acylating agents of the monocarboxylic acid series, into mono-, di- or tri-esters. Acylation can be effected in several stages. The products are used in therapeutics.—*Société pour l'Industrie Chimique à Bâle.* Belg. pat. 422,730, Aug. 31, 1937. (A. P.-C.)

Disinfectant—Dry, for Seeds. Mercury or copper compounds are mixed with lecithin, isocholesterol, woolfat, etc.—FRITZ WOLFF, assignor to SCHERING-KABLBAUM A. G. U. S. pat. 2,109,143, Feb. 22, 1938. (A. P.-C.)

Germinal Gland Hormones—Method of Purifying Crude Extracts of, and of Isolating the Latter Therefrom. Crude extracts containing male and female gland hormones having at least one hydroxyl group in the molecule, are treated with acylating agents. The esterified portion is separated by physical means from the non-esterfied products. The purified esters of the germinal gland hormones thus obtained are saponified and the hormones are isolated.—ERWIN SCHWENK, MAX GEHRKE and FRIEDRICH HILDEBRANDT, assignors to SCHERING-KAHLBAUM A. G. U. S. pat. 2,106,763, Feb. 1, 1938. (A. P.-C.)

Gold Compounds—Complex, Process for the Production of. Keratinous substances are subjected to acid hydrolysis until solution is complete. The excess of acid is neutralized by means of reducing agents, and the hydrolysate is made to react with a gold compound.—SCHERING-KAHLBAUM A.-G. Belg. pat. 422,053, July 31, 1937. (A. P.-C.)

Gold Compounds—Manufacture of Therapeutically Valuable. Keratins are hydrolyzed (with acids or acid followed by a proteolytic enzyme) until water-soluble and converted into gold compounds without reduction. For example, hair is heated with 18% hydrochloric acid at 100° until dissolved, neutralized with ammonia, filtered, treated with gold chloride until a permanent precipitate is formed, neutralized with sodium hydroxide, and poured into ethyl alcohol. The precipitated gold derivative is purified by redissolution in sodium hydroxide and reprecipitation with ethyl alcohol and contains 6% gold.—SCHERING-KAHLBAUM A.-G. Brit. pat., 479,358; through *J. Soc. Chem. Ind.*, 57 (1938), 457. (E. G. V.)

Heavy Metals and Hydrosulfide Groups—Production of Compounds Containing, from Keratins. At the same time as they are hydrolyzed with acids the keratinates are reduced with zinc, the hydrolysis medium is neutralized until it has a weakly acid reaction, and the white zinc compound which precipitates is separated by filtration and decomposed by hydrogen sulfide. The solution thus obtained is treated with water-soluble salts of other heavy metals. The compounds are used in therapeutics.—JOHANN A. WULFING. Belg. pat. 422,515, Aug. 31, 1937. (A. P.-C.)

Iodine Compounds—Water-Soluble Organic. Details are given of the production of the di-sodium salt of 2,6-diiodo-4-sulfophenoxyacetic acid and other water-soluble salts of iodo-phenoxyaliphatic sulfonic acid compounds of the general formula: $\overbrace{CY:CY.CY:CY.CY:}:COX\text{-alk}$, in which *X* represents CH_2COO—, $(CH_2)_2COO$— or $(CH_2)_3COO$—, one *Y* represents —SO_3-alk, at least one *Y* represents iodine, and the remaining *Y*'s represent hydrogen or iodine, and *alk* represents a basic radical capable of producing water-soluble salts. Products are obtained suitable for use as radio opaque media in urography.—WM. HIEMENZ and LOUIS FREEDMAN, assignors to WINTHROP CHEMICAL CO. U. S. pat. 2,098,094, Nov. 2, 1937. (A. P.-C.)

Iodine in Enols—Substitution of, by Means of Iodine and Hydrogen Peroxide. Ethyl α-iodoacetoacetate, *sym*-iodoacetylacetone and α-iodotetronic acid were prepared from the corresponding enols using iodine and 30% hydrogen peroxide. These iodo enols decompose with the liberation of iodine. Heat and water accelerate the decomposition.—W. D. KUMLER. *J. Am. Chem. Soc.*, 60 (1938), 855. (E. B. S.)

1-Keto-2-methyl-7-hydroxy-1,2,3,4-tetrahydrophenanthrene—Synthesis of. Though this oxyketone contains 15 carbon atoms in the same stereo-position as equilenine, it exhibits no oestrogenic activity and has no effect on the cock's comb. It was synthesized by reaction of β-(6-methoxy-1-tetralyl)ethyl bromide on the sodium compound of diethyl methylmalonate, followed successively by decarboxylation, dehydrogenation and treatment with concentrated sulfuric acid. —G. HABERLAND and E. BLANKE. *Ber.*, 70 (1937), 169–171; through *Chimie & Industrie*, 39 (1938), 123. (A. P.-C.)

Ketones—Arsenated Derivatives of Mixed. Arsenicals of Peonol. The preparation of 2,2′-dimethoxy-4,4′-dihydroxy-5,5-diacetylarsenobenzene is described.—C. KENNETH BANKS and CLIFF S. HAMILTON. *J. Am. Chem. Soc.*, 60 (1938), 1370. (E. B. S.)

Local Anesthetics—α-Aryl-β-dialkyl-aminoalkyl Ureas as. The preparation of a series of six α-aryl-β-dialkylaminoalkyl ureas is given. Two of these when applied to the tongue in the form of their hydrochlorides produced local anesthesia. They were α-phenyl-β-(1-di-*n*-butylaminopropyl-2) urea and α-(*o*-methoxyphenyl)-β-(1-di-*n*-butylaminopropyl-2) urea.—HENRY WENKER. *J. Am. Chem. Soc.*, 60 (1938), 158. (E. B. S.)

Mandelic Acids—Preparation of Substituted, and Their Bacteriological Effects. The following substituted mandelic acids were prepared for study as urinary antiseptics: *p*-methyl, *p*-ethyl, *p*-isopropyl, *p*-*s*-butyl, *p*-*t*-butyl and 2,4,6,-trimethylmandelic acids. No pharmacological tests are given but in vitor tests seem to show some of these compounds to be more active bacteriologically than mandelic acid.—J. L. RIEBSOMER, JAMES IRVINE and ROBERT ANDREWS. *J. Am. Chem. Soc.*, 60 (1938), 1015. (E. B. S.)

Mercury Compounds—Organic. Germicidal and therapeutic mercury compounds are produced by causing an aromatic mercury compound, such as phenylmercury hydroxide, to react with an acid or acid derivative such as *o*-chlorobenzoic acid, *o*-iodobenzoic acid, 3- or 5-chlorosalicylic acid, 1-chloro-2-carboxy anthraquinone, 1-chloro-2-carboxy naphthoic acid, tetrachlorophthalic acid, 3,5-di-iodo-4-hydroxybenzoic acid, Eosene Y ("Schultz" No. 881), or Phloxine ("Schultz" No. 888). Various details of procedure are described.—CARL N. ANDERSEN assignor to LEVER BROS. CO. U. S. pat. 2,103,657, Dec. 28, 1937. (A. P.-C.)

Mercury Derivatives of Biphenyl—Some. The following mercury derivatives of biphenyl were prepared through the Nesmejanow method: -*pp*′-biphenyl dimercuric chloride, *p*-biphenyl mercuric chloride, and *o*-biphenyl mercuric chloride. *o*-Biphenyl mercuric acetate, nitrate, picrate, and butyrate and ortho mercuri-bisbiphenyl are also described.—FREDERICK B. HULL. *J. Am. Chem. Soc.*, 60 (1938), 321. (E. B. S.)

α-Nicotine and ω-Bromoacetophenone—Condensation of. In purifying the mixture resulting from the condensation, there were isolated three picrates, one of which melted at 209.5° to 211° C., and corresponded to the picrate of 7-(*N*-methyl-α-pyrrolidyl)-2-phenylpyrimidazole. There was also obtained from the reaction mixture a dihydrobromide corresponding to the above picrate and melting at 272° to 274° C. The free base obtained from the dihydrobromide is a viscous, uncrystallizable oil. The analytical results showed that the condensation takes place with liberation of one molecule of water and one molecule of hydrobromic acid.—J. L. GOLDFARB and M. V. ANDRIJTSCHUK. *Compt. rend. acad. sci. U. R. S. S.*, 15 (1937), 473–477; through *Chimie & Industrie*, 38 (1937), 1146. (A. P.-C.)

Phenols—Alkyl. Various details are given for the preparation of such germicidal and fungicidal compounds as *sec*-amyl phenol (boils at 238° to 244° C.), *sec*-hexyl phenol (boils 250° to 260° C.), *sec*-hexyl cresol (boils 259° to 263° C.), *sec*-heptyl phenol (boils 270° to 285° C.), *tert*-amyl cresol (boils 207° to 251° C.), di-isopropyl phenol (boils 231° to 242° C.), and *sec*-hexyl resorcinol (boils at 155° to 180° C. under a pressure of 1 mm. of mercury).—HYYM E. BUC, assignor to STANDARD OIL DEVELOPMENT CO. U. S. pat. 2,104,412, Jan. 4, 1938. (A. P.-C.)

Phenoxyalkanols—Ortho Arsenated. A series of ortho arsenated phenoxyalkanols were prepared by condensing *o*-nitrophenol with propylene chlorhydrin, reducing the corresponding amine, and introducing the arsono group by means of the Bart reaction. Nitration of the α-methyl-β-2-arsonophenoxyethanol gave α-methyl-β-2-arsono-4-nitrophenoxyethyl nitrate, which was hydrolyzed to the ethanol. From this the 4 amino compound was obtained by catalytic reduction of the nitro group. The arseno compounds were obtained from the above arseno compounds by reduction with hypophosphorous acid. The arsonic acids when reduced with sulfur

dioxide and hydriodic acid as catalyst gave the arsenious oxides. Physical properties and analyses are given.—STEPHEN B. BINKLEY and CLIFF S. HAMILTON. *J. Am. Chem. Soc.*, 60 (1938), 134. (E. B. S.)

Phenylethylamines—Physiologically Active. 1. Hydroxy- and Methoxy-α-Methyl-β-Phenethylamines. The preparation of α-methyl-β-phenylethylamine hydrochloride and the *o*-, *m*- and *p*-methoxy and the *o*-, *m*- and *p*-hydroxy derivatives is described. The *o*- and *m*-derivatives are here described for the first time. Results of pharmacological studies are to appear elsewhere.—E. H. WOODRUFF and THEODORE W. CONGER. *J. Am. Chem. Soc.*, 60 (1938), 465. (E. B. S.)

Phenylmercuric Compounds. A review is made by the Danish Apothecaries Control Laboratory of the literature concerning phenyl mercuric salts. Fifty-six reactions of formation of simple phenyl mercuric salts are cited and their general properties and qualitative reactions are discussed, also their stability in solution. Work of Hein and Meiniger on the dissociation constant of phenyl mercuric hydroxide is described. Methods of quantitative analysis of such mercury compounds and special properties of thirty-six salts are considered. Calvery's method of preparation of mercury diphenyl is cited, also preparation methods for various salts. Eight variant ways of preparing the acetate are discussed, including direct mercuriation of benzol, and its preparation from phenylhydrazine and mercuric acetate in the presence of cupric acetate. Ten preparations of various salts by double decomposition are reviewed. The bactericide and fungicide properties of phenyl mercuric compounds are reviewed and tabulated. Their use for preservation of sera and biological products and their clinical use in gynecology are discussed. Toxicity to animals and humans is reviewed. Trade names of specialties containing phenyl mercuric salts are listed. Monographs are released by the control laboratory for: hydrargyri phenylo acetas, hydrargyri phenylo chloridum and hydrargyri phenylo subnitras, with descriptions, purity rubrics, tests and mode of synthesis. One hundred thirteen literature references are cited.—J. K. GJALDBAEK and V. H. MIKKELSEN. *Arch. Pharm. Chemi*, 45 (1938), 229. (C. S. L.)

epi-*allo*-Pregnanol-3-one-20—Preparation of. The preparation of the pregnanolone from commercially available pregnenolone is described. *allo*-Pregnanolone was obtained as a by-product.—G. FLEISCHER, B. WHITMAN and E. SCHWENK. *J. Am. Chem. Soc.*, 60 (1938), 79. (E. B. S.)

Purine—Mercuric Derivatives of. One molecule of allyltheobromine (prepared according to Braun) in boiling water on treating with one molecule of mercuric acetate in boiling water for 30 minutes gave chloromercurihydroxypropyltheobromine, which decomposes at 156° C. The bromine analogue prepared as above decomposes at 200° to 202° C.; it has a strong diuretic action together with a low toxicity. Allyltheobromine (1 Gm.) in 20 cc. of alcohol and 1.5 Gm. of mercuric acetate in 30 cc. of alcohol gave acetoxymercuriethoxypropyltheobromine, which melts at 172° to 173° C. Chloro- and bromo-mercuriethoxypropyltheobromine, prepared as above, melt at 199° and 190° to 191° C., respectively.—T. UKAI, M. HAYASHI and H. ABE. *J. Pharm. Soc. Japan*, 57 (1937) 5; through *Chimie & Industrie*, 38 (1937), 938. (A. P.-C.)

Pyramidone Camphorate. The curves of initial and final melting point of mixtures of pyramidone and camphoric acid indicate an anomaly at the equimolecular mixture. Crystallization of the equimolecular mixture from water and ethyl alcohol yields products with initial melting points of 73.5° and 74° and final melting points of 83.5° and 110°, respectively. Hence commercial preparations are probably mixtures of the two substances, the true compound being prepared by fusion of the equimolecular mixture.—D. PONTE. *Boll. chim.-farm.*, 76 (1937), 677–678, 681–682; through *J. Soc. Chem. Ind.*, 57 (1938), 455. (E. G. V.)

Pyrimidine Compounds—Manufacture of. Aliphatic or araliphatic amidines are condensed with acetic esters having as substituents a protected amino-alkyl group or a group convertible into amino-alkyl, and CHO, CH.OH or etherified CH.OH; the resulting 4-hydroxypyrimidines are converted into 4-aminopyrimidines, and the amino-alkyl group is developed.—A. CARPMAEL. Brit. pat. 473,193; through *J. Soc. Chem. Ind.*, 57 (1938), 141. (E. G. V.)

Salicylic Acids—Iodo-Substituted, Production of. Salicylic acid and 1–2 mols of iodine in 33% aqueous ethyl alcohol at 100° in the presence of the theoretical amount of iodic acid give mono- or di-iodosalicylic acids, which are separated by crystallization from their alkali or alkaline-earth salts, the iodine compound being the less soluble.—E. VIEL. Brit. pat. 474,153; through J. *Soc. Chem. Ind.*, 57 (1938), 225. (E. G. V.)

Salol—Homologues of. The salicylates of *o*-*n*-amylphenol, *p*-*n*-amylphenol, 3-*n*-amyl-*o*-cresol, 5-*n*-amyl-*o*-cresol, 4-*n*-amyl-*m*-cresol, 3-*n*-amyl-*p*-cresol, 3-(1-methylbutyl)-*p*-cresol and 4-chloro-*o*-cyclohexylphenol were made and their rates of saponification compared to that of salol. Their rates were found to compare favorably with that of salol. The preparation of 3-(1-methylbutyl)-*p*-cresol is given. Its phenol coefficient by the F. D. A. method at 37° using aureus "Reddish," was 100. The general procedure for the preparation of the salicylates is also given.—H. G. KOLLOFF and J. O. PAGE. *J. Am. Chem. Soc.*, 60 (1938), 984. (E. B. S.)

Sarsasapogenin. I. An Investigation of the Side Chain. The results of an investigation into the structure of sarsasapogenin, with an idea that it might be possible to degrade it into physiologically active substances of the sex hormone type, are given. Further work is in progress. —LOUIS F. FRESER and ROBERT P. JACOBSEN. *J. Am. Chem. Soc.*, 60 (1938), 28. (E. B. S.)

Sulfanilamide—Purification of. *p*-$NH_2.C_6H_4.SO_2.NH_2$ for therapeutic purposes is purified by precipitating the free base from a crude salt in aqueous solution. Salts with acids are precipitated by a mild alkali (sodium carbonate), salts with bases by reducing the alkalinity (for example, by adding ammonium salts).—I. G. FARBENIND. A.-G. Brit. pat. 480,059; through *J. Soc. Chem. Ind.*, 57 (1938), 589. (E. G. V.)

Temperature and Presence of Catalysts—Effect of, on Dissociation of Salicylic Acid during Sublimation. The velocity of the reaction of decomposition of salicylic acid to phenol and carbon dioxide rises with temperature, in particular in presence of catalyst (zinc or iron).—O. GUSHOVSKAJA. *Prom. Org. Khim.*, 4 (1937), 284–286; through *J. Soc. Chem. Ind.*, 57 (1938), 136. (E. G. V.)

Thiobarbituric Acid Compound—Production of. *iso*-Propylallylthiobarbituric acid, melting point 180°, which has hypnotic properties, is obtained from $CH_2CHCH_2CPr\beta(CO_2ET)_2$, sodium ethylate and thiourea at 100–105°.—A. F. BURGESS. Brit. pat. 474,842; through *J. Soc. Chem. Ind.*, 57 (1938), 226. (E. G. V.)

α-Tocopherol—on the Constitution of. From a study of the thermal decomposition products produced by oxidation with chromic acid, of α-tocopherol, $C_{29}H_{50}O_2$, the most active compound of the vitamin E group, the author has proposed a structure for this compound. He regards it as a substituted 6-hydroxy-chromane with a long aliphatic side chain attached to the pyran ring.—E. FERNHOLZ. *J. Am. Chem. Soc.*, 60 (1938), 700. (E. B. S.)

Vitamin D—Method and Means of Producing. *2,106,779*—Vitamin D characteristics are produced in ergosterol by vaporizing the ergosterol on a heated mass of indium and passing the vapor through a zone of antirachitically activating electrical discharge in a vacuum. *2,106,780*—Ergosterol is vaporized and is condensed in successive zones in a vacuum tube, and both the vapor and the condensate are subjected to the influence of an antirachitically activating electrical discharge while subject to a vacuum in the tube. *2,106,781* and *2,106,782* cover various features of an apparatus for carrying outt he process.—CHAS. C. WHITTIER. U. S. pats. 2,106,779 to 2,106,782, incl., Feb. 1, 1938. (A. P.-C.)

BIOCHEMISTRY

Acetylcholine—Cholinesterase System of. Based on recently obtained evidence which indicates that the fundamental phenomena underlying the blood depressor action produced by choline derivatives may be an exchange adsorption between the cations of the administered choline derivative and those of acetylcholine naturally fixed to tissue surfaces, work is described for the esterase hydrolysis of acetylcholine, considered from a kinetic point of view, and the adsorption affinities of a series of choline derivatives for cholinesterase have been measured by an application of equations of the type derived by Langmuir for adsorption on solid surfaces. An equation is arrived at experimentally for the velocity of acetylcholine hydrolysis by cholinesterase in the region of maximum velocity. This equation was also derived by assuming simultaneous adsorption of acetylcholine and choline on the surface of the esterase. A method is presented for measuring the relative affinities of choline derivatives for the surface of the esterase. The relative affinities of the acetylcholine, choline, ethoxycholine and butoxyformocholine were measured. It is shown that the relative affinities for cholinesterase bear no relationship to the physiological activities which these compounds exhibit.—M. ZIFF, F. P. JAHN and R. R. RENSHAW. *J. Am. Chem. Soc.*, 60 (1938), 178. (E. B. S.)

Alcohol in Blood and Urine of Subjects Showing Signs of Inebriation. Determinations made by Nicloux' method on about 20 cases of transportation workers, examined medically and

chemically, showed that signs of inebriation begin to appear at an alcohol content of the blood of 0.1 to 0.15%, while 0.2% or more represents a characteristic state of drunkenness. The corresponding urine values are generally slightly lower.—P. NELIS and M. VAN TEMSCHE. *Ann. Hygiène*, 15 (1937), 1–11; through *Chimie & Industrie*, 38 (1937), 1083. (A. P.-C.)

Alcohol Dehydration—Importance of Azeotropic Mixtures in. Cane sugar is converted in the state of Pernambuco into anhydrous ethyl alcohol by the process of the Soc. Anon. des Distilleries des Deux-Sevres.—S. RIEBER. *Rev. chim. ind.*, 6 (1937), 419–423; through *J. Soc. Chem. Ind.*, 57 (1938), 349. (E. G. V.)

Allantoin—Influence of, on Growth of Chicken Epithelial Cells and Chondroblasts in Culture. Pure cultures of chicken epithelial cells and chondroblasts under the influence of allantoin at various concentrations showed a slight retardation of growth which was in proportion to the concentration. In high dilution of allantoin neither stimulation nor retardation of growth could be observed.—H. J. CHU. *Proc. soc. exptl. biol. med.*, 38 (1938), 99. (A. E. M.)

Anesthetic Solutions and Mixtures for Preparing Same. The solution contains tri-procaine citrate, di-procaine malate and mono-procaine tartrate, the tartrate constituting between 5 and 50% by weight of the combined quantity of the other two salts.—DAVID CURTIS. U. S. pat. 2,110,826, March 8, 1938. (A. P.-C.)

Antirachitic Provitamin—Production of, from Cholesterol. When cholesterol acetate spectroscopically free from the antirachitic provitamin, was allowed to react with benzoquinone in a sealed tube at 120–130° for about two hours and the product freed from quinhydrone and unconverted quinone, it was found to contain substantial quantities of 7-dehydrocholesterol. The crude mixture was then irradiated in pure ethyl ether with a quartz mercury lamp for four hours and the resulting product assayed biologically. It showed an antirachitic potency of more than, 6500 U. S. P. Vitamin D units per Gm. Further work is being done with cholesterol, stigmasterol and sitosterol, using various hydrogen acceptors and dehydrogenating catalysts.—NICHOLAS A. MILAS and ROBERT HEGGIE. *J. Am. Chem. Soc.*, 60 (1938), 984. (E. B. S.)

Antirachitic Substances—Production of. Substances containing sterols are subjected to mild oxidation and then activated: *e. g.*, 4–30% hydrogen peroxide is added to a 2% ethyl alcohol solution of cholesterol and the mixture boiled for 40 minutes in a quartz flask while it is being subjected to irradiation.—J. WADDELL. U. S. pat. 2,056,992; through *J. Soc. Chem. Ind.*, 57 (1938), 227. (E. G. V.)

Antirachitic Vitamin—Isolation of, from Halibut Liver Oil. The vitamin isolated from halibut liver oil is shown to be identical with vitamin D_3 by means of its biological activities and identity of the crystalline 3,5-dinitrobenzoates. No evidence of any other vitamin D in halibut liver oil was found.—H. BROCKMANN. *Hoppe-Seyler's Z. physiol. Chemie*, 245 (1937), 96–102; through *Chimie & Industrie*, 39 (1938), 123. (A. P.-C.)

***l*-Ascorbic Acid—Function of, in the Life of Plants and Yeasts.** Together with peroxidase, ascorbic acid plays an active part in the respiration of yeast cells and of tea leaves, the mechanism of which is as follows: ascorbic acid is oxidized under the action of atmospheric oxygen, becomes inactive, is dehydrogenated and forms peroxides; peroxidase reduces ascorbic acid according to the reaction $2H_2O + H_2O_2 +$ peroxidase $= 2H_2O_2 + H_2$. Ascorbic acid thus forms with peroxidase, as with catalase, a complex oxido-reducing system.—I. A. GOLYANITSKII and K. A. BRYUSHKOVA. *Biologych. J.*, 5 (1936), 1083–1090; through *Chimie & Industrie*, 38 (1937), 1174. (A. P.-C.)

Ascorbic Acid Values—Invalidation of Plasma, by Use of Potassium Cyanide. For dependable ascorbic acid values, blood should be centrifuged, the plasma deproteinized and the plasma-HPO_3 filtrate titrated immediately after the blood is drawn. Whole blood, standing in a closed small vial with a minimum of air space, may give fair results for 30 minutes. Higher values, obtained with bloods to which potassium cyanide has been added, represent an enhancement due to the action of the latter on the dichlorophenolindophenol, and in no way a more accurate determination of the ascorbic acid. Potassium cyanide does not prevent the loss of ascorbic acid from blood.—CHESTER J. FARMER and ARTHUR F. ABT. *Proc. soc. exptl. biol. med.*, 38 (1938), 399. (A. E. M.)

Blood Analysis—Systematic Errors in. In Moog's method of deproteinization, 10 cc. of blood is mixed with 10 cc. of 20% trichloroacetic acid and filtered. The precipitate measures about 2 cc., hence results of determinations made on the filtrate should be multiplied by $^{30}/_{9}$ instead of the ordinary factor 2. Analytical data for some nonprotein nitrogen determinations are given.—

M. D. Mezincesgo. *Bull. soc. chim. biol.*, 19 (1937), 109–112; through *Chimie & Industrie*, 39 (1938), 53. (A. P.-C.)

Blood Chlorides—Micromethod for the Determination of. Mix 5 cc. of 0.45% zinc sulfate solution and 1 cc. of decinormal sodium hydroxide, then add 0.1 cc. of the blood; heat a few minutes on the steam-bath, filter and wash the precipitate with two 3- to 5-cc. portions of water; to the total filtrate add 2 drops of potassium chromate solution and 1 drop of 0.1% indigo carmine solution and titrate with hundreth-normal silver nitrate until the green color just changes to a yellow. A blank determination on the reagents is imperative.—S. LEWINSON. *Bull. soc. chim. biol.*, 18 (1936), 1537–1541; through *Chimie & Industrie*, 38 (1937), 668. (A. P.-C.)

Blood Coagulation—Effect of Formaldehyde on. Small amounts of formaldehyde decrease the clotting effect of organ extracts (thrombokinase). Large amounts inhibit clotting completely. It is suggested that formaldehyde combines with the amino groups which are products of the coagulation process. The amino groups are necessary for clot formation.—A. FISCHER. *Enzymologia*, 1 (1936), 85–91; through *Chimie & Industrie*, 38 (1937), 1137. (A. P.-C.)

Blood—Determination of Glucose and Chlorides in, by Means of Photoelectric Cell. *Glucose.*—Add 1.6 cc. of *N*/12 sulfuric acid to 0.2 cc. of blood (obtained by pricking) in an hemolysis tube. Mix and add 0.2 cc. of 10% sodium tungstate. Mix, allow to stand for 5 minutes, then centrifuge. Transfer 1 cc. of the clear liquid to a tube and add 1 cc. of carbonated cuprotartaric solution. Close the tube with a piece of rubber tubing and a pinch clamp. Place in boiling water for 30 minutes, opening the clamp to allow air to escape, then cool rapidly. Centrifuge, then wash four times with 2-cc. portions of distilled water. Take up the cuprous oxide in amonia and transfer completely to a 25-cc. flask. Add 10 cc. of freshly prepared solution of sodium diethyl-dithio-carbamate (1 Gm. carbon disulfide, 10 cc. of 10% diethylamine in alcohol, mix, add 7 cc. of 2*N* soda, mix and make up to 140 cc. with distilled water). Transfer to a photocolorimetric tube 1 cm. thick and determine the deviation corresponding to the optical density. Run a blank and correct. A standard curve is given. *Chlorides.*—Wash 0.2 cc. of blood into a tube containing 1 cc. of *N*/10 silver nitrate acidified with nitric acid. Heat on a water-bath for 15 minutes, centrifuge and decant. Wash the precipitate three times with acidulated water, then dissolve in about 1 cc. of ammonia. Transfer this solution with the aid of water into a 25-cc. flask, add about 15 cc. of glycerin, mix, add 0.5 cc. of fresh, colorless ammonium sulfide, mix and make up to 25 cc. with glycerin. Measure the optical density using a blue screen. The standard curve presented gives the Gm. of chloride ion per liter.—C. POLLES and L. FROCRAIN. *J. pharm. chim.*, 26 (1937), 408–413. (S. W. G.)

Blood Sugar—Iodometric Microdetermination of. To 1 cc. of blood or serum add 2 cc. of water and 1 cc. of 40% mercuric nitrate solution, stir, add 2 cc. of a solution of sodium hydroxide of such concentration (about normal) that the resulting mixture has a p_H of 6.5 to 7.0, filter and dilute to 25 cc. Add a pinch of copper bronzing powder to remove mercury and determine glucose in 20 cc. of the solution by the iodometric method described in *Bull. soc. chim. biol.*, 16 (1934), 932–940.—C. DUMAZERT. *Bull. biol. pharm.*, (1936) 593–599; through *Chimie & Industrie*, 38 (1937), 666–667. (A. P.-C.)

Blood Sugar—Semi-Microdetermination of. After reduction of alkaline copper solution by the sugar of the blood, a sulfuric acid solution containing ferric ions is added in excess to the reduced solution; and the ferric iron is quantitatively reduced to the ferrous state by the cuprous oxide produced by the sugar. Hence, titration of the ferrous iron produced gives a measure of the sugar originally present. A sulfuric acid solution of diethylamine is used as indicator.—F. MORENO MARTIN and E. SUAREZ PEREGRIN. *An. Soc. Esp. Fis. Quim.*, 34 (1936), 842–849; through *Chimie & Industrie*, 38 (1937), 668. (A. P.-C.)

Blood and Urine—Some Microchemical Tests for the Identification of Constituents of. To identify blood in urine by means of the benzidine test (oxidation of benzidine to benzidine blue by means of hydrogen peroxide in presence of hemoglobin as catalyst) it is advisable to carry out the reaction as a spot test. The reagents required are 3% hydrogen peroxide, twice normal sodium hydroxide and 0.05% benzidine in solution in 10% acetic acid. Tyrosine also can be detected in urine and in serum by means of a spot test using α-nitroso-β-naphthol after dealbumination. Leucine can be detected microchemically in urine and in serum by precipitating as crystallized copper leucinate by means of a half-saturated solution of copper acetate.—K. NOSAKA. *Mikrochim. Acta*, 1 (1937), 78–82; through *Chimie & Industrie*, 39 (1938), 254. (A P.-C.)

Cod Liver Oil—Vitamin A and D Contents of. The iodine value of the oil is not alone indicative of the vitamin content. The vitamin A (antimony trichloride test) and vitamin D (biological assay) contents of oils varied widely.—E. BECKER. *Mezög. Kutat.*, 10 (1937), 247–254; through *J. Soc. Chem. Ind.*, 57 (1938), 548. (E. G. V.)

Diazo Reaction of the Blood—Significance of. The diazo reaction of the blood is due almost entirely to imidazole compounds. Blood contains only a trace of volatile phenols or none at all, less than 1 mg. per liter of polyphenols, and very minute quantities of tyrosine and other nonvolatile monophenols.—G. BARAC. *Compt. rend. soc. biol.*, 134 (1937), 266–269; through *Chimie & Industrie*, 38 (1937), 667. (A. P.-C.)

Eczema—Acidified Milk with High Fat Content in. Acidified milk with high fat content added to diet of infants with eczema, improves nutritional condition, and has favorable effect on eczema.—J. C. TRAVERSARO. *Semana méd.*, 44 (1937), 1578; through *J. Am. Med. Assoc.*, 109 (1937), 542. (G. S. G.)

Emulsions—Edible, Preparation of. Carbon dioxide is incorporated in edible emulsions of the water-in-oil type, such as margarine, whereby the aroma and the keeping qualities of the product are improved. Use of a monoglyceride as emulsifying agent is claimed.—H. C. LUNDSGAARD. Brit. pat., 468,810; through *J. Soc. Chem. Ind.*, 57 (1938), 223. (E. G. V.)

Follicle Hormones—Isolating. A method of isolating follicle hormones from crude solutions such as urine of pregnant individuals, without preliminary concentration or purification, comprises subjecting the initial material to the action of a reagent for ketonic compounds, such as semicarbazide or hydroxylamine acetate, which is capable of forming condensation products with the hormones, and separating the reaction product, as by filtration with kieselguhr and further purification treatment.—WALTER SCHOELLER, ERWIN SCHWENK and FRIEDRICH HILDEBRANDT, assignors to SCHERING-KAHLBAUM A. G. U. S. pat. 2,103,735, Dec. 28, 1937. (A. P.-C.)

Foods—Vitamin Content of. A summary of the chemistry and determination of the vitamins and their significance in human nutrition.—E. P. DANIEL and H. E. MUNSELL. *U. S. Dept. Agr. Misc. Pub.*, (1937), Nov. 275, 175 pp. through *J. Soc. Chem. Ind.*, 57 (1938), 220. (E. G. V.)

Formaldehyde—Detection of, in Preserved Foods. Preserved herrings, tunny, meat, yeast, vegetables, etc., when treated with dilute acid and distilled, give distillates containing small amounts of formaldehyde.—G. LA PAROLA. *Ann. chim. applicata*, 27 (1937), 555; through *J. Soc. Chem. Ind.*, 57 (1938), 586. (E. G. V.)

Fruits of Hawaii—Composition, Nutritive Value, and Use of. Analytical data, including vitamin contents (rat tests), food values and descriptions of 24 fruits, are recorded.—C. D. MILLER, K. BAZORE and R. C. ROBBINS. *Hawaii Agric. Exp. Sta. Bull.*, No. 77 (1937), 133; through *J. Soc. Chem. Ind.*, 57 (1938), 444. (E. G. V.)

Glucose—Is It Necessary to Defecate Spinal Fluid before Determining? Unelss the fluid is very purulent, it can be centrifuged to remove cells and used directly for the determination of glucose by the methods of Folin, LeBerre and Lewis-Benedict without removal of proteins or polypeptides.—R. DANET. *Bull. biol. pharm.*, 18 (1936) 603–606; through *Chimie & Industrie*, 38 (1937), 667. (A. P.-C.)

Glycerol—Production of, from Fermentation of Sugar. Maximum yields of glycerol (I) and aldehyde (II) are obtained from fermentation of sugar solutions in presence of the maximum quantity of sodium sulfite which the yeast can tolerate The maximum rate of fermentation of an 8.55% sugar solution to II in presence of 4.27% of sodium bicarbonate was reached in 2.5 hours. The II produced was converted into alcohol and acetic acid. Equal amounts of I and acetic acid were formed.—F. M. HESSE. *Rev. Cubana azucar alc.*, 1 (1935), 282–283; through *J. Soc. Chem. Ind.*, 57 (1938), 431. (E. G. V.)

Glycogen—Liver and Muscle, Method for Determining, in Small Quantities of Tissues. The method is like Pflüger's except that 0.5 Gm. of tissue is used and the treatment with potassium hydroxide, precipitation of the glycogen, washing with ethanol and ether and hydrolysis of the glycogen are all done in the same small flask, which is so shaped that it fits a centrifuge cup. The glycogen is sedimented after each step by centrifuging. After hydrolysis the sugar is determined by the Hagedorn-Jensen method.—A. LOUBATIÈRES. *Compt. rend soc. biol.*, 124 (1937), 699–700; through *Chimie & Industrie*, 38 (1937), 1085. (A. P.-C.)

Hematogen—Biochemical Changes in, during Storage. Pasteurization at 54° C. during manufacture is not sufficient, as it does not prevent subsequent bacterial and enzyme action with decrease in carbohydrates and increase in acidity. Degradation of proteins is insignificant.—V. G. KIRILLOV. *Voprosy Pitaniya*, 5 (1936), 55–58; through *Chimie & Industrie*, 39 (1938), 119. (A. P.-C.)

Hemin—Chemical Luminescence of, as a Means of Identifying Traces of Blood. Addition to hemin of a solution of the hydrazide of 3-aminophthalic acid in sodium carbonate gives rise, in presence of hydrogen peroxide, to a weak luminescence; on the other hand, under the same conditions dried blood gives a strong, durable, blue luminescence. The reaction is specific for blood; other biological, organic and inorganic substances do not give it.—W. SPECHT. *Angew. Chem.*, 50 (1937), 155–157; through *Chimie & Industrie*, 39 (1938), 54. (A. P.-C.)

Hemoglobin—Determining. S. recommends the photolometer for routine determinations of hemoglobin. He uses 0.05 cc. of capillary blood diluted in 10 cc. of 0.1% sodium carbonate. The average variation is 2% from the Van Slyke method.—W. D. STOVALL. *Modern Hospital*, 50 (1938), 84; through *Chem. Abstr.*, 32 (1938), 2968. (F. J. S.)

Hip Berries—Dried, Antiscorbutic Activity of Sugar Plums Containing. Sugar plums containing 10% of hip berries contain about 700 biological units of vitamin C per kilo. The Devyatnin method gives much lower values than the Tillmans method. The vitamin C content by the former falls to one-half in 3 months but to only three-quarters by the latter.—N. CHEPILEVSKAIA. *Voprosy Pitaniya*, 5 (1936), 75–78; through *Chimie & Industrie*, 38 (1937), 1144. (A. P.-C.)

Hormones—Extraction of. Alkali silicates, preferably the sodium salts, are added to solutions containing hormones and are then converted into the gel form by addition of acids. The hormone is extracted from the isolated gel either directly or after conversion into sol form.—N. HEILPERN. Brit. pat., 470,400; through *J. Soc. Chem. Ind.*, 57 (1938), 227. (E. G. V.)

Hormones and Vitamins—Whale Organs as Raw Material for Recovery of. The preservation and utilization of the hypophysis and corpus luteum as sources of hormones, and of the liver as a source of vitamin A, are particularly discussed.—C. BOMSKOV and F. UNGER. *Fette u. Seifen*, 45 (1938), 90–94; through *J. Soc. Chem. Ind.*, 57 (1938), 457. (E. G. V.)

Hypoglucemia—Hyperglucemic Response to, in Diabetic and Healthy Individuals. In healthy individuals and experimental animals, hypoglucemia entails hyperglucemia in the post-absorptive state. In the diabetic the same physiologic process takes place on a greatly magnified scale. Hypoglucemias produced in diabetics by overdoses of insulin entail an excessive hyperglucemia and glucosuria. Recurrence of this sequel over longer periods of time increases the instability of the patient and aggravates the disease.—MICHAEL SOMOGYI. *Proc. soc. exptl. biol. med.*, 38 (1938), 51. (A. E. M.)

Indian Mangoes—Vitamin Content of Some. Vitamin content varied greatly among the 30 varieties tested. The best varieties gave the following figures for vitamin A (as carotene) and vitamin C (as ascorbic acid): Alfonso 34 and 800, Badami 110 and 598 mg. per Kg., respectively.—G. B. RAMASARMA. *Proc. Soc. Biol. Chem., India*, 3 (1938), 16–17; through *J. Soc. Chem. Ind.*, 57 (1938), 4444. (E. G. V.)

Inositol—Separation and Determination of, in Glucose Mixture. The glucose may be destroyed by heating with magnesia, and the inositol determined by oxidizing first with periodic acid. The inositol content may also be determined as the difference between a total determination by periodic acid and determination of the glucose with Fehling's solution.—P. FLEURY and M. JOLY. *J. pharm. chim.*, 26 (1937), 341–353, 397–408. (S. W. G.)

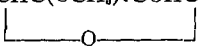
Isopropyl Alcohol—Presence of, in Alcohol from Wine. From 1 liter of oil, yielded from 300 hectoliters of wine, were obtained by fractional distillation 20 Gm. of propyl alcohol.—M. FLANZY and M. BANOS. *Compt. rend.*, 206 (1938), 218–219; through *J. Soc. Chem. Ind.*, 57 (1938), 572. (E. G. V.)

Ketone Bodies—Excretion of, on a Fat Diet during Fever. The following summary is given: The production of fever has a ketogenic action in rats fed on a fat diet, since there is an increased excretion of ketone bodies in the urine immediately after the cessation of a period of fever. The fever may produce this effect by stimulating the anterior pituitary gland, extracts of which increase the excretion of ketone bodies. During fever there was an inhibition of the normal rise in liver glycogen of rats on a fat diet, which was probably due to an influence of the anterior

pituitary, since injections of an extract of the gland were found also to prevent the rise in liver glycogen.—R. WIEN. *Quart. J. Pharm. Pharmacol.*, 11 (1938), 1–10. (S. W. G.)

Lead—Determination of, by Means of Diphenyl-Thiocarbazone in the Blood and Feces of Healthy and Sick Individuals. Use of this reagent permits of operating on much smaller samples, *e. g.*, 20 cc. of blood in healthy individuals and 10 cc. in those who are seriously intoxicated. For feces, a sample corresponding to 10 Gm. of dry matter is sufficient. The maximum error for quantities of lead varying from 10 to 40γ is $\pm$15%. Observations on 148 normal individuals who had not been in contact with lead gave a normal lead content of 15 to 80γ per 100 cc. of blood; the critical values seem to be 100γ per 100 cc. of blood and 40γ per liter of urine, with considerable variations in the course of the day. The feces of 24 hours can contain up to 1000γ of lead. The determination has little diagnostic value if the amount of lead which can be taken in the food and drink is not taken into consideration. On the other hand, it is important not to rely on a single determination, but to follow the patient over a period of several days.—H. TAEGER and F. SCHMITT. *Arbeitsschutz*, (1937), 154–155; through *Chimie & Industrie*, 39 (1938), 273. (A. P.-C.)

Monomethylvitamin C—Antiscorbutic Action of. Synthetic methylascorbic acid of the formula $H_2COHCHOHCHC(OCH_3){:}COHCO$ had a slight antiscorbutic action in some guinea



pigs and none at all in others. It is evidently different from the compound thought to be a methylascorbic acid isolated from cabbage in 1925, since the latter had a marked antiscorbutic action.—N. BEZSSONOFF and R. SACREZ. *Compt. rend. soc. biol.*, 124 (1937), 356–358; through *Chimie & Industrie*, 38 (1937), 1145. (A. P.-C.)

Nettles—Vitamin A Content of, Dried. One gram of dry nettles (*Urtica dioica*) contains about 200 prophylactic (rat) units of vitamin A, corresponding to approximately 130 to 140 international units. The minimum therapeutic dose for rats is 5 mg. The tests were carried out on dried and ground nettle leaves mixed with hydrogenated fat.—S. N. MATSKO. *Voprosy Pitaniya*, 6 (1937), 160; through *Chimie & Industrie*, 38 (1937), 739. (A. P.-C.)

Nutrition of Infants—Developments in. Recent changes, including the feeding of artifically soured, concentrated (extra fat and total solids), humanized and fortified milks, are enumerated. The basis of progress has better balance of constituents, more calories and vitamins in the diet, and material of better hygienic quality.—T. BAUMGARTEL. *Milchw. Zentr.*, 66 (1937), 391–399; through *J. Soc. Chem. Ind.*, 57 (1938), 217. (E. G. V.)

Oxycholesterol—Blood, Action of Carbon Monoxide on. Ox blood was treated with carbon monoxide and after drying in vacuum, was extracted with chloroform. Chemical and spectroscopic tests indicated that the oxycholesterol of normal blood and that derived from carbon monoxide-treated blood are different.—T. H. TANG and Y. H. CHAO. *J. Chinese Chem. Soc.*, 5 (1937), 6–7; through *Chemie & Industrie*, 38 (1937), 1103. (A. P.-C.)

Pituitary Body—Estimation of the Growth Hormone of the Anterior Lobe of the. The following summary is given: A method of estimating the growth hormone of the anterior lobe of the pituitary body on hypophysectomized rats is described. The relation between the growth response in seven days and the logarithm of the dose of anterior lobe extract is shown to be linear within a certain range of doses. The coefficient of x in the equation to the regression is 14. This quantity, being the slope of the line, is fairly constant for animals used for the first time after hypophysectomy. Methods of comparing the relative potency of two extracts are described, and the error of the estimate is calculated. Since the response of rats to the growth hormone is not so uniform in a second test, it is best to use rats only once for a quantitative comparison.—E. BÜLBRING. *Quart. J. Pharm. Pharmacol.*, 11 (1938), 26–33. (S. W. G.)

Plant Germs—Constituents of. I. New Compounds from the Unsaponifiable Portion of Wheat Germ Oil. By means of digitonin, there were isolated from wheat germ oil three new crystallized alcohols, α-tritisterol (melting point 114° to 115° C.), β-tritisterol (melting point 979° C.), and an as yet unnamed alcohol melting at 162° to 163° C. They at first separate from their solutions as a rigid gel, even in presence of seed crystals, and crystallization of the gels starts only at the end of several hours. Both compounds are mono-alcohols with at least one double bond. Preliminary analyses indicate a composition corresponding to the formula $C_{30}H_{50}O$. —P. KARRER and H. SALOMON. *Helv. Chim. Acta*, 20 (1937), 424–436; through *Chimie & Industrie*, 38 (1937), 738. (A. P.-C.)

Prolan A—Output of, in Urine in Certain Extragenital Conditions. The results of Aschheim-Zondek tests on urines from patients with diseases of the secondary sex organs show that, with one possible exception, lesions of the breast and prostate are not associated with any increase in prolan A excretion in the urine. Among additional cases examined the positive results obtained with chorionic epithelioma, teratoma testis (two cases), and an unsuspected case of pregnancy confirm previous findings in these conditions, and the negative results in cases of ovarian cryst, uterine fibroids and pituitary eosinophil adenoma are in keeping with the majority of previous observations.—D. WOODMAN. *Brit. Med. J.*, 4029 (1938), 666. (W. H. H.)

Protein—Biological Synthesis of. Materials such as ethyl alcohol and acetaldehyde, obtained synthetically, alone or mixed together may replace part or all of the carbohydrate used in the propagation of *Torula utilis*, though the process is uneconomic owing to the high cost of synthetic ethyl alcohol.—K. R. DIETRICH, W. LOHRENGEL and H. GRASSMAN. *Z. Spiritusind.*, 61 (1938), 7; through *J. Soc. Chem. Ind.*, 57 (1938), 312. (E. G. V.)

Provitamins A—Analysis of, in Blood Serum. Food analyses showed that native prisoners and servants of Batavia get practically no vitamin A proper. They get a uniform quantity of provitamin A and this is reflected in analyses made of their blood, in which α-carotene is almost absent, β-carotene is present only in small quantities, but cryptoxanthin constitutes about 25–35% of the total carotenoids. The true vitamin A level in the blood of Batavian prisoners is comparable to that of Europeans notwithstanding the fact that the former group draws all of their vitamin A from the provitamins mentioned above.—A. G. VAN VEEN and J. C. LANZING. *Proc. Acad. Sci. Amsterdam*, 40 (1937), 779; through *Chem. Abstr.*, 32 (1938), 2582. (F. J. S.)

Sexual Hormones—Colorimetric Determination of. The color reaction of *m*-dinitrobenzene with sex hormones in the presence of potassium hydroxide and ethanol is due to condensation with the active CH_2 in the CH_2CO group. The absorption data for androsterone, testosterone estrone, equilin and creatinine are given. Time, temperature and concentration must be very carefully controlled for determination of the hormones.—W. ZIMMERMANN. *Hoppe-Seyler's Z. physiol. Chem.*, 245 (1936), 47–57; through *Cheime & Industrie*, 38 (1937), 665–666. (A. P.-C.)

Sexual Hormones—Preparation of. Solutions of crude, natural mixtures of hormones, but not of synthetic mixtures of pure hormones, in wheat germ oil are claimed as being more toxic than suspensions in water or solutions in other oils. Examples of 2–9 fold increase in activity are cited.—C. L. HOLTMAN and K. PETERSEN-BJERGAARD. Brit. pat., 475,936; through *J. Soc. Chem. Ind.*, 57 (1938), 227. (E. G. V.)

Sterols—Which, Are Present in Wool Fat? The literature is critically reviewed. The author has found 9% of saturated sterols, dihydrocholesterol (I), among those precipitated by digitonin, and confirms the view that Lifschütz's "metacholesterol" is nothing but impure cholesterol (II). I and II are considered as the only true sterols proved to be present, agnosterol and lanosterol being regarded as triterpene derivatives. The individual nature of "oxycholesterol" is doubted.—P. MOHS. *Fette u. Seifen*, 45 (1938, 152–154; through *J. Soc. Chem. Ind.*, 57 (1938), 543. (E. G. V.)

Sugars and Glycosides—Action of Magnesia on. The action of magnesia on sugars has been shown to differ from that of baryta and calcium carbonate. For this investigation the following experiments were carried out: (*a*) 20 cc. of an aqueous solution containing 1 Gm. of the sugar was triturated with 6 Gm. of freshly calcined magnesia, the mixture was dried over sulfuric acid for 3–4 days, powdered and extracted with 50% alcohol by refluxing for 30 minutes; (*b*) 1 Gm. of the sugar was shaken with 30 cc. of 50% alcohol and 6 Gm. of magnesia and the mixture refluxed for 30 minutes; (*c*) the procedure in (*b*) was repeated using water in place of the alcohol. In each case the sugar not retained by the magnesia was found by determination of the sugar in an aliquot portion of the separated liquid. In the case of glucose scarcely any was recovered in the first method, while in the second and third methods only 2 to 5% was found in the aliquot. With mannitol the retention by the magnesia was much less, 40–75% being recovered; the percentage recovered in the case of levulose was 2–20, and with lactose and sorbitol it was 10–30. With the sugars other than glucose the reaction of magnesia is similar to that of baryta and chalk, the sugar is fixed and can be recovered from the magnesia residue; with glucose a more or less complete decomposition of the sugar molecule takes place, practically no glucose can be

recovered from the magnesia residue. The methyl-*d*-glycosides did not react with magnesia under these conditions and could be completely recovered in the separated liquid, a behavior which may be utilized for the separation of the greater part of the reducing sugars from such glycosides contained in plant extracts. The magnesia used for this reaction should be freshly calcined and in a proportion not less than indicated above. Commercial magnesia is less active, while the hydroxide and carbonate have practically no effect upon sugars.—M. JOLY. *J. pharm. chim.*, 25 (1937), 457. (S. W. G.)

Urine—Organic Phosphates of. Organic phosphates in urine may be rapidly determined by precipitating the inorganic phosphates by magnesia mixture at p_H 8.8 to 9.0, filtering and digesting aliquot portions of the filtrate with perchloric acid and a little hydrogen peroxide (30%). In this manner the organic compounds of phosphorus are converted into inorganic phosphates which may then be determined colorimetrically. A further aliquot portion of the filtrate is examined for inorganic phosphates, a correction being made for any found present. Normal urines examined contained an average value of 9.6 mg. organic phosphate, calculated as phosphorus, per 24 hours. Results are also given for urines from pathological subjects. A diet rich in organic phosphates raised the excretion of the latter in the urine of normal subjects.—J. J. RAE. *Biochem. J.*, 31 (1937), 1622; through *Quart. J. Pharm. Pharmacol.*, 11 (1938), 130. (S. W. G.)

Urine—Sulfur Compounds in Adialyzable. The compounds are listed as follows: (1) A series of polypeptide derivatives having cysteinic sulfur (sulfonic); (2) A series of polypeptide derivatives having cystinic sulfur (bisulfide); (3) A series of polypeptide derivatives having methionic sulfur (thio-methyl). These three series may account for 80% of the total urinary organic sulfur.—C. LEFEVRE and M. RANGIER. *J. pharm. chim.*, 27 (1938), 154–159. (S. W. G.)

Urobilin—Fluorescimetric Determination of, in Urine. The urine is treated with a few drops of iodine in potassium iodide solution to oxidize urobilinogen to urobilin, then a little solid zinc acetate is added to develop the fluorescence and the mixture is diluted with an equal volume of alcohol. After filtering, the fluorescence is compared with that of a standard solution of gonacrine in a Royer comparator.—P. CLAUDO. *Bull. biol. pharm.*, (1936), 575–580; through *Chimie & Industrie*, 38 (1937), 666. (A. P.-C.)

Vitamin A—A Comparative Study of the Colorimetric, Vitameter and Biological Tests for. Though the biological method of testing vitamin A is believed by many to be the only reliable one, chemical tests and physical measurements have been considerably used. Report is made of a study covering a number of years and showing a comparison of the biological method, the antimony trichloride and the vitameter test. Experimental details are given and results of tests are tabulated and discussed. The following conclusions were reached: The vitameter and antimony trichloride tests give results with a very high percentage of fish liver oils and concentrates which are in close agreement with the biological tests. There are a few cases where the discrepancies are beyond the limits of error of the methods and indicate a lack of specificity of either the vitameter or color test. It is doubtful that either method can serve as an absolute substitute for the biological method. Either the vitameter or color test serves a very useful purpose as a supplement to the biological test. The antimony trichloride test gives results fully as reliable as the vitameter. In general both methods give results which are in close agreement with each other.—A. BLACK, R. D. GREENE, H. L. SASSAMAN and C. SABO. *J. Am. Pharm. Assoc.*, 27 (1938), 199. (Z. M. C.)

Vitamin A—Biochemistry of. The author summarizes briefly our present knowledge about the biological action of vitamin A. He also gives the dosing methods used by him and the results of the diffuseness of the vitamin in nature.—T. CESSI. *Biochim. terap. sper.*, 16 (1938), 176. (A. C. DeD.)

Vitamin A of Fish Liver Oils. A study of the vitamin A content of the liver oils of some fresh-water fishes revealed that some of the liver oils show, besides relatively weak bands at 620 and 580 mμ, a much stronger band at 645 or 690 mμ. Dihydrocarotene is a "Chromogen 645" and acts as vitamin A. It is suggested that the chromogens 645 and 690 may possibly be intermediate products of the transformation of carotene into vitamin A.—E. A. LEDERER and V. A. ROZANOVA. *Biokhimya*, 2 (1937), 293–303; through *Chimie & Industrie*, 38 (1937), 738. (A. P.-C.)

Vitamin A—Pine Needles as a Source of. The lowest therapeutic dose of needles of *Picea excelsa* collected in the spring and summer lies between 10 and 5 mg. per day. One kilo of the fresh needles contains about 130 vitamin A units.—S. N. MATSKO. *Voprosy Pitaniya*, 5 (1936), 31–34; through *Chimie & Industrie*, 38 (1937), 1144. (A. P.-C.)

Vitamin A—Stability of, in Ghee. Heat (100°) is less active than light in its destructive action on vitamin A and the stability depends to a large extent on the other natural coloring matters accompanying vitamin A in the fat. Rancid butter fat gives a characteristic pink color with the antimony trichloride-chloroform reagent, which varies in depth with the peroxide value of the fat. After exposing butter fat and coconut oil to strong sunlight, their unsaponifiable fractions give a precipitate with the reagent as well as a red color.—N. N. DASTUR. *Proc. XIth World's Dairy Cong., Berlin*, 1 (1937), 495–496; through *J. Soc. Chem. Ind.*, 57 (1938), 581. (E. G. V.)

Vitamin B_1—Determination of. In many cases a modification of the Jansen method can be used, consisting in oxidizing the substance or solution to be analyzed by means of potassium ferricyanide in alkaline medium, taking up the thiochrome thus formed by means of isobutyl alcohol and comparing the intensity of the violet fluorescence under ultraviolet light with that of a solution of known thiochrome or vitamin B_1 content.—W. KARRER and U. KUBLI. *Helv. Chim. Acta*, 20 (1937), 369–373; through *Chimie & Industrie*, 38 (1937), 738. (A. P.-C.)

Vitamin B_2 Content of Commercial Dry Yeasts. The vitamin B_2 contents of commercial dry yeasts were approximately equal. Hence vitamin B_2 may be uniformly produced in the yeast in spite of the different culture conditions.—YOSHITO SAKURAI and RAI SIRASU. *J. Agr. Chem. Soc. Japan*, 13 (1937), 759; through *Chem. Abstr.*, 32 (1938), 2184. (F. J. S.)

Vitamin B_6. A communication. Certain properties of vitamin B_6 are given.—JOHN C. KERESZTESY and JOSEPH R. STEPHENS. *J. Am. Chem. Soc.*, 60 (1938), 1268. (E. B. S.)

Vitamin B_6—Crystalline. Details are given for the procedure used in obtaining a crystalline product designated as vitamin B_6, the fraction of the B_2 complex responsible for the cure of rat acrodynia. This product had an activity of 5γ(gamma) per "rat day dose." Daily administration of 15γ cured rat acrodynia in two weeks.—PAUL GYÖNGY. *J. Am. Chem. Soc.*, 60 (1938), 983. (E. B. S.)

Vitamin B_6—Crystalline. Vitamin B_6, identical with the P. P. principle, was prepared from rice bran. The hydrochloride is easily soluble in water and melts at 204–206°. The single curative dose in rats is no more than 0.1 mg.—JOHN C. KERESZTESY and JOSEPH R. STEVENS. *Proc. soc. exptl. biol. med.*, 38 (1938), 64. (A. E. M.)

Vitamin C Content of Indian Foods. Capsicum. The vitamin content of Indian foods has been studied and has been shown to vary widely. The author used the modified micro method of Tillmans and coworkers for determining ascorbic acid, checking the standard solution of ascorbic acid daily. The extraction was carried out as follows: 30 Gm. of capsicum stems were ground between two stones to give a stiff paste to which was added during the grinding 5 cc. of 20% trichloracetic acid, 20 cc. distilled water and 1 cc. 0.1*M* potassium chloride solution. The thin paste so obtained was then centrifuged for 5 to 7 minutes at 3000 r. p. m., the supernatant liquid decanted and the residue extracted twice with 17 cc. of 20% trichloracetic acid and 5 drops of 1*M* potassium cyanide. The combined liquid is measured, filtered through a Büchner funnel and titrated from a microburette against 0.1 cc. of standard indicator solution, after the addition of 2 cc. distilled water and 2 cc. acetic acid. The results are tabulated for a series of extracts and for the same extracts after treatment with hydrogen sulfide. The ascorbic acid content of the ripe fruit is higher than for the green fruit.—C. A. ROTHENHEIM. *Pharm. Acta Helv.*, 13 (1938), 19. (M. F. W. D.)

Vitamin C Deficiency Estimated by the Capillary Resistance Test. Eighty-seven subjects were examined by Göthlin's capillary fragility method. These subjects included patients with gastric and duodenal ulcer, cases of various diseases and normal people of both sexes. Hospital patients on a dietary regimen for gastric or duodenal ulcer showed a degree of capillary fragility significantly greater than normal subjects or patients suffering from other diseases. Examination of the records of the patients indicates that the degree of capillary fragility is related to inadequacy of the diet in respect of antiscorbutic vitamins. No evidence was obtained from the records that the development of peptic ulcer was conditioned by deficiency of antiscorbutic vitamins in the diet.—G. BOURNE. *Brit. Med. J.*, 4027 (1938), 560. (W. H. H.)

Vitamin C in Gladiolus Leaves. Vitamin C can be detected in the cellular fluids of gladiolus leaves by means of various reagents.—O. DISCHENDORFER. *Arch. pharm.*, 275 (1937), 242–255; through *Chimie & Industrie*, 38 (1937), 739. (A. P.-C.)

Vitamin C—Variation of Content of, in Plants. Comparative field trials carried out in the Pamirs showed that for a number of vegetables the amount of ascorbic acid present increased with the height at which the plant was grown. Thus with three kinds of rape the proportion of ascorbic acid was 50 to 100% greater in plants grown at 4000 meters than in those from 2300 meters. Similar results were observed with cabbage, potatoes and radishes.—V. A. BLAGOVESHCHENSKY. *Bull. Biol. Med. exp. U. S. S. R.*, 3 (1937), 189; through *Quart. J. Pharm. Pharmacol.*, 11 (1938), 132. (S. W. G.)

Vitamin D Assays—Photographing Line Tests in. The technic of staining and photographing rat bones for records of vitamin D assays is described. The apparatus and technic employed allow the photographing of as many as 80 single rat radii on a 12.5 x 17.5 cm. film at 2 x magnification.—M. W. TAYLOR, D. KLEIN and W. C. RUSSELL. *Ind. Eng. Chem., Anal. Ed.*, 30 (1938), 26–28. (E. G. V.)

Vitamin D Derivatives and Some Sterols. The naphthoate of vitamin D crystallizes in needles that melt at 132° C. and have specific rotatory power of 149.47°; cholesterol naphthoate melts at 168° C. and is optically inactive; sitosterol naphthoate melts at 190° and has a specific rotatory power of 2.5°; ergosterol naphthoate melts at 175° C. The β-anthraquinone carboxylic acid esters of the three above sterols have the following properties: cholesterol—melts 170° C., optically inactive; sitosterol—melts 189° C., specific rotatory power −1.3°; sitosterol—melts 195° C. The crystalline vitamin D obtained by saponification of the naphthoate prepared by irradiation of ergosterol has an antirachitic potency of 40,000 international units per mg.—M. SUMI. *J. Agric. Chem. Soc. Japan*, 12 (1936), 1211–1216; through *Chimie & Industrie*, 39 (1938), 123. (A. P.-C.)

Vitamin H—Concentration and Properties of. Concentrated preparations of vitamin H (the heat-stable factor which has to be added to vitamin B_1 and riboflavin to complete the growth-promoting activity of the vitamin B complex, while preventing the development of erythroedemic dermatosis in rats) were obtained from whey powder and from rice polishings by a series of extractions with alcohol and chloroform-alcohol mixtures (in which the vitamin is soluble), and with ether (in which it is insoluble), combined with removal of impurities by adsorption on fuller's earth. The rice polishings yielded the more active preparation, of which 1 mg. daily supported growth at the rate of 3 Gm. per week over a period of four weeks in rats which previously had been losing weight. The vitamin was found to be most soluble in 80% alcohol, less soluble in absolute alcohol, *n*-butyl alcohol and isoamyl alcohol, and much less soluble in acetone. It was readily adsorbed on activated charcoal, from which it could be eluted by means of a mixture of equal volumes of alcohol and benzene to remove traces of water.—L. H. BOOHER. *J. Biol. Chem.*, 119 (1937), 223; through *Quart, J. Pharm. Pharmacol.*, 11 (1938), 132. (S. W. G.)

Vitamins—Knowledge of. Influence on Resistance to Infection. The conclusion of series of articles.—A. RICHARD BLISS, JR. *Drug and Cosmetic Ind.*, 42 (1938), 308–309. (H. M. B.)

Vitamins and Anemias. A discussion.—A. RICHARD BLISS, JR. *Drug and Cosmetic Ind.*, 42 (1938), 444–445. (H. M. B.)

Wine, Brandy and Vitamins. Brandy is enriched in vitamins by maceration with yeast, and the product may be mixed with unfermented juice. The production of high-quality spirit is discussed and suitable reduced-pressure plant described, with especial reference to the production of materials appropriate for export to tropical countries.—E. BARBET. *Mem. Soc. Ing. Civ. France*, 90 (1937), 498–514; through *J. Soc. Chem. Ind.*, 57 (1938), 431. (E. G. V.)

Wines—Maturing of. The principles underlying the storage of wines in cellars for maturing purposes are described. Differences in aroma and flavor of wines of different vintages and geographical sources are discussed. The sweetening of wines and the use of preservatives are discussed.—H. KASERER. *Osterr. Chem. Ztg.*, 40 (1937), 509–514; through *J. Soc. Chem. Ind.*, 57 (1938), 213. (E. G. V.)

ANALYTICAL

Acid Fruits—Color Reaction of Aged Juices of. I. Lemon and orange juices, preserved by tyndallization or addition of ethyl alcohol, benzyl alcohol, sulfur dioxide or formic acid and

kept for 3–5 years, contain a volatile substance (soluble in water, ethyl alcohol and ether; insoluble in carbon disulfide, chloroform and light petroleum) which gives a reddish violet color with benzidine in acetic acid-ethyl alcohol solution.—E. SOLARINO. *Ann. chim. applicata*, 27 (1938), 110–111; through *J. Soc. Chem. Ind.*, 57 (1938), 443. (E. G. V.)

Aromatics and Volatile Oils—Research in the Field of. A review of the work accomplished in the laboratory of organic chemistry of the Catholic Institute in Paris includes catalytic hydrogenation at high pressure and temperature, the extension of the Cannizzaro reaction by the use of benzyl alcoholic potash, primary aryl ketones, α-aloxyacetal and its aldehyde and the reduction products of α- and β-ionone. Twenty-four references are given.—L. PALFRAY. *Riechstoff-Ind. Kosmetik*, 13 (1938), 27–33. (H. M. B.)

Aromatics and Volatile Oils—Research in the Field of. Conclusion of a review dealing with the analysis of volatile oils, analytical reactions, laboratory directions and books. Four additional references are given.—L. PALFRAY. *Riechstoff-Ind. Kosmetik*, 13 (1938), 50–52. (H. M. B.)

Beeswax Production in Anglo-Egyptian Sudan. The crude extraction methods employed by the natives yield an inferior product. About 100 tons of beeswax are exported annually.—L. W. GREENE. *Am. Bee J.*, 78 (1938), 118; through *Chem. Abstr.*, 32 (1938), 3179. (F. J. S.)

Bismuth—Volumetric Determination of, as Bismuth Hydrogen Iodide Oxine. Tests made with the method of Berg and Wurm, in which the bismuth is precipitated as $C_9H_7ON.HBiI_4$, resulted in values which were about 1% too low. A series of experiments showed that in carrying out the method the final concentration of sulfuric acid, nitric acid or perchloric acid, could be as high as 1*N* but low results were obtained if the Cl^- concentration was over 0.08*N*. With 0.3*N* Cl^- the results were 7.5% too low and the filtrate contained considerable bismuth. An excess of 0.001 mole potassium iodide appears to be sufficient. The precipitate is appreciably soluble and the results are usually within 0.3% of the truth unless the quantity of bismuth present is small; in this case the results vary according to the method of washing the precipitate. Better results were obtained by titrating the excess of iodine used than by the direct titration of the hydrochloride solution of the precipitate. L. W. Andrew's method of titrating with potassium iodate to ICl was found preferable to that of Lang and the results compare favorably with those obtained by Hecht and Reissner in their modification of the Berg and Wurm method.—I. M. KOLTHOFF and F. S. GRIFFITH. *Mikrochim. Acta*, 3 (1938), 47; through *Chem. Abstr.*, 32 (1938), 3289. (F. J. S.)

Bulgarian Rose Essence. "*Rosa Damascina*," a hybrid of *Rosa gallica* and *R. canina* and "*Rosa Damascina* var. *alba*," which are used for commercial purposes in Bulgaria, their cultivation, harvesting and distillation are described. The following physical and chemical constants of the essences from various crops and localities are tabulated: sp. gr. $_{30°}$ 0.848–0.8636, (*d*) −2.2 to −4.4°, $(n)_{25°}$ 1.4538–1.4646, freezing point 16–22.50°, acid number 0.93–3.08, ester number 7.40–16.80, saponification number 8.40–18.70, acetylization number 194–240, alcohols 59.60–82%, combined alcohols 2.94–3.60, free alcohols 62.56–78.40, citronellol rhodinol 27.40–56.90, stearoptene 16–24%. Based upon the assay of 243 samples the ordinary rhodinol content varies from 35–51%. It is concluded that this content in essences distilled in large stills is less than that from the small primitive still.—G. KARAIVANOFF. *Drug and Cosmetic Ind.*, 42 (1938), 580–582. (H. M. B.)

Chaulmoogra Oils—Analysis of. I. Carpotroche Brasiliensis (Sapucainha) Oil. Details of the quantitative and qualitative analysis of *Carpotroche brasiliensis* oil for the fatty acids, and the results of the analysis are given.—HOWARD IRVING COLE and HUMBERTO T. CARDOSO. *J. Am. Chem. Soc.*, 60 (1938), 614. (E. B. S.)

Chaulmoogra Oils—Analysis of. II. Oncoba Echinata (Gorli) Oil. The analysis of *Oncoba echinata* by the method described by the authors [*J. Am. Chem. Soc.*, 60 (1938), 614] is given.—HOWARD IRVING COLE and HUMBERTO T. CARDOSO. *J. Am. Chem. Soc.*, 60 (1938), 617. (E. B. S.)

Codeine—Colorimetric Microdetermination of. Morphine (I), codeine (II) and narceine are isolated from opium and I is determined by the methods of Ginzberg and Yurashevskiĭ. The I plus II content is determined as follows: add 1 cc. of 2% hydrochloric acid, diluted to 10 cc. with water, to 5 cc. of solution. Repeat with 3 cc. of standard 0.05% I solution of the same acetic

acid concentration (*loc. cit.*) as the test solution, add 4 cc. of bromine to 5 cc. of 10% sodium hydroxide and dilute to 50 cc. with water; add 2 drops of this solution to each solution, followed by 2 drops of 3% hydrogen peroxide. Add 1 cc. of 25% aqueous ammonia to each solution after 25 seconds. Add 5 cc. of test solution to the standard and 5 cc. of water to the test solution (to compensate for coloration of the extract) and compare the colorations. The actual I content is deducted from the apparent I content. The difference times 1.83 = the II content. A modification for analysis of poppy heads is described.—N. YURASHEVSKIĬ. *Org. Chem. Ind.* (*U. S. S. R.*), 3 (1937), 29; through *Chem. Abstr.*, 32 (1938), 3899. (F. J. S.)

Copper—Colorimetric Determination of. Using a Leitz compensating colorimeter Š. was able to match unknown solutions of copper sulfate in the range 4–12 mg. of copper with an error of ±1.8% against a standard copper sulfate solution containing 200 mg. of copper per liter. For values of 2 mg. or less the error due to matching of solutions rose abruptly to 10%. The addition of potassium hydroxide and 1,2-diaminoanthraquinonesulfonic acid (I) to copper sulfate solutions enabled a matching with the standard copper sulfate solution in the range 0.04–0.2 mg. of copper with a maximum error of ±1.2%. Additions of potassium hydroxide to I made this reagent about 100 times as sensitive as equivalent additions of ammonia did. With additions of $K_4Fe(CN)_6$ to the copper solution Š. determined 5 mg. of copper per 100 cc.; below this value (0.5–5 mg.) the solution became cloudy. An addition of citric acid to the $K_4Fe(CN)_6$-copper sulfate solutions enabled Š. to extend the workable range of the solutions to 1 mg. of copper per 100 cc. with an error of ±1.2%. The addition of sodium sulfide and sodium albuminate to copper sulfate solutions produced a slight turbidity in solutions containing more than 1.5 mg. of copper per 100 cc. so that the color which developed was not proportional to the copper in solution.—J. ŠEBOR. *Chem. Listy*, 31 (1937), 419; through *Chem. Abstr.*, 32 (1938), 3290. (F. J. S.)

Copper—Estimation of, in Presence of Lead. The addition of ammonium molybdate to a solution of brass or bronze containing considerable lead eliminates the formation of lead iodide and insures a colorless end reaction with thiosulfate, and starch as indicator. Some analytical figures show a consistency in results.—J. W. JACKSON. *Chem. Eng. Mining Rev.*, 30 (1938), 142; through *Chem. Abstr.*, 32 (1938), 3290. (F. J. S.)

Creatinine—Colorimetric Determination of. A modification of the Folin-Jaffe method, in which $(NO_2)_2C_6H_3{\cdot}CO_2H$ is substituted for picric acid [*cf.* Komm and Leinbrock, *Med. Klin.*, 32 (1936), 1303] is shown to give erratic results when applied to meat extracts.—BAIER AND WALTER. *Z. Untersuch Lebensm.*, 74 (1937), 281–283; through *J. Soc. Chem. Ind.*, 57 (1938), 443. (E. G. V.)

Crude Fibre—Determination of. A modification of Weende's method is described.—O. RING. *Suomen Kem.*, 11, A, (1938), 12; through *J. Soc. Chem. Ind.*, 57 (1938), 451. (E. G. V.)

Fluorescent Indicators—Application of Certain Naphthols as. Ten dyestuffs, sold as naphthazoles, were studied and all showed fluorescence at p_H 8.2 to 8.6 or 9.5 to 10.3 in sodium hydroxide solutions. These dyestuffs can be used for determining p_H in this region or for titrating acid solutions with sodium hydroxide. They are more satisfactory than β-naphthol.—M. DÉRIBÉRÉ. *Ann. chim. anal.*, 18 (1936), 289–290; through *Chimie & Industrie*, 39 (1938), 45. (A. P.-C.)

Fluorimetry—Quantitative, Studies on. An extensive theoretical discussion of the principles of the fluorimetric method for quantitative analysis, comparing it to the colorimetric method. Analyses on porphyrins and cholic acid are described.—FRITZ BANDOW. *Biochem. Z.*, 295 (1938), 154; through *Chem. Abstr.*, 32 (1938), 3288. (F. J. S.)

Hydrargyrum Amidatobichloratum. In the purity test for the presence of mercurous chloride, as described in the State Pharmacopœia VII, care should be taken not to overheat the mixture as turbidity will appear even in the pure material.—G. V. TSISINA. *Farm. Zhur.*, 1 (1937), 58; through *Chem. Abstr.*, 32 (1938), 3090. (F. J. S.)

Hydrocyanic Acid—Field Method for Determination of, in Citrus Fumigation. For determination of hydrocyanic acid in the tent atmosphere during fumigation, 3 liters of the air are aspirated through 100 cc. of 2% aqueous sodium hydroxide. This solution is acidified by adding 25 cc. of 10% sulfuric acid, and neutralized with excess of sodium bicarbonate, after which it is titrated rapidly with 0.01*N* iodine.—W. H. DYSON. *J. S. African Chem. Inst.*, 21 (1938), 13–14; through *J. Soc. Chem. Ind.*, 57 (1938), 584. (E. G. V.)

Iodine Value—Determination of, from the Refractive Index. The iodine value equals $(K-n_D)/0.000118$, where K equals 1.4595 at 20° and 1.4517 at 40°.—V. ILLARIONOV and M. TORTSCHINSKI. *Maslob. Zhir. Delo*, No. 6 (1937), 23–25; through *J. Soc. Chem. Ind.*, 57 (1938), 548. (E. G. V.)

α-Ketoglutaric Acid—Microdetermination of. A method for the determination of α-ketoglutaric acid (I) in aqueous solutions is described. I is converted to the 2,4-dinitrophenylhydrazone which is extracted with ether and oxidized with permanganate to succinic acid. The latter is determined manometrically by the use of succinic dehydrogenase. The method is applicable to amounts above 2 mg. Ten human urines contained between 10 and 40 mg. of I per 24-hour sample.—HANS A. KREBS. *Biochem. J.*, 32 (1938), 108; through *Chem. Abstr.*, 32 (1938), 3727. (F. J. S.)

Kreis Test—Improved. In connection with an investigation into the oxidation of butter fat, a new modification of the Kreis test has been devised. Previous forms of the test were found to be too insensitive to detect and give a quantitative index of the degree of oxidation in fats, particularly in the earliest stages of oxidation. The reaction in the present test occurs in a single phase, a solution of trichloroacetic acid in amyl acetate being substituted for concentrated hydrochloric acid. The phloroglucinol is dissolved separately in amyl acetate. The technique described gives reproducible, quantitative results, and is much more sensitive than previous modifications.—W. P. WALTERS, M. M. MUERS and E. B. ANDERSON. *J. Soc. Chem. Ind.*, 57 (1938), 53–56. (E. G. V.)

Male Fern—Colorimetric Determination of. The method developed by the author depends on the fact that phlorglucin, which is present in active male fern, gives a blood-red precipitate of benzeneazophlorglucin with aniline nitrate and potassium nitrite. Sulfanilic acid also was found to give a color with male fern and the intensity of the color was a function of the amount and quality of the filicin in the extract. The analysis is carried out as follows: Into each of two 50-cc. flasks is placed 0.50 Gm. of the well-stirred extract and 25 cc. of an acid solution of sulfanilic acid (2:150 with 50 cc. of 2.5% hydrochloric acid) and 8 cc. of 2% solution of sodium nitrite. The mixture is shaken well for one minute and then 17 cc. of 5% solution of sodium hydroxide is added. The mixture is again shaken for 2 minutes and allowed to stand in all exactly 5 minutes. The solution is diluted to 500 cc. in a volumetric flask, a 50-cc. aliquot taken, 5 drops saturated solution calcium chloride added, and allowed to stand 2 minutes, after which it is compared in a colorimeter with an alcoholic solution of pellidol (diazoethylaminoazotoluene) and the per cent of filicin read from a curve shown in the article. It is especially important that the flask be allowed to stand exactly 5 minutes before diluting and that the color be observed immediately and in diffuse sunlight. Phenols interfere, but starch, sugar, glycerin, acetic, propionic and valerianic acids do not. A sample of the extract was divided into two parts, one of which was exposed to the air and sunlight, and the other kept well stoppered in a cool place for one day. The latter sample when assayed colorimetrically gave 2% more filicin while when assayed for crude filicin by official methods, the former showed 3% more.—P. A. Popoff. Scienta Pharm., 9(1938), 29–32. (M. F. W. D.)

Mercury Vapors—Elimination of, in the Air. Up to 80 or 90% (and even more) of the mercury present can be removed by atomizing potassium permanganate into the atmosphere to be purified. The optimum concentration is 0.5 to 1.0%; the time of contact should be not less than 1 second.—R. LEITES, N. POLEJAEV and S. PLISSETSKAYA. *Hig. Truda*, 15 (1937), 46–49; through *Chemie & Industrie*, 38 (1937), 1101. (A. P.-C.)

Methyl Alcohol—Determination of, in Ethyl Alcohol and Ethyl-Alcoholic Beverages. II. Two modifications of the original method are described for use with materials containing 0.05–2.5 and 0.01–0.25 mg. of methyl alcohol per cc., respectively. The extinction coefficient of the re-formed fuchsin solution is not strictly dependent on the methyl alcohol concentration, and the exact relations are graphically recorded. The methyl alcohol contents of specimens of cognac, whiskey and rum were 0.047–0.106, 0.001–0.013 and 0.006–0.010 mg. per cc., respectively.—O. ANT-WUORINEN and E. KOTONEN. *Z. Untersuch Lebensm.*, 74 (1937), 273–281; through *J. Soc. Chem. Ind.*, 57 (1938), 431. (E. G. V.)

Nitrobarbituric Acid—Precipitation of Organic Bases in the Crystalline State by Means of. Alypine, diocaine, ephedrine, eucaine B, pentocaine, piperazine and benzoylmorphine give characteristic precipitates with nitrobarbituric acid. These precipitates are described and their charac-

teristics pointed out.—L. ROSENTHALER. *Mikrochem.*, 21 (1937), 219; through *Chimie & Industrie*, 39 (1938), 313. (A. P.-C.)

Oleaginous Seeds—Phosphorus-Containing Constituents of Certain. The total and phosphatide phosphorus pentoxide and phytin contents of a number of seeds were: soya 1.53–1.69, 0.0813–0.1403, 1.37–1.39; cotton 1.84–2.28, 0.1098–0.1540, 2.17–2.64; flax 1.47–1.73, 0.0385–0.0633, 1.47–1.72; sunflower 1.70, 0.00744, 2.01; and groundnut 1.05, 0.0388, 1.13%, respectively.—M. I. LISCHKEVITSCH. *Maslob. Zhir. Delo*, No. 6 (1937), 9–10; through *J. Soc. Chem. Ind.*, 57 (1938), 546. (E. G. V.)

Permanganate, Persulfate, Dichromate and Ferricyanide Ions—Detecting Traces of, in Their Mixtures. The presence of an oxidizing agent is shown by the color formed with phenolphthalein when a little strong base is added to a solution buffered to p_H 5.5. If the solution is treated with nickel sulfate solution any ferricyanide ion present is precipitated and the filtered precipitate will give a green color with sodium hydroxide and a solution of the leuco base of malachite green. The filtrate from the ferricyanide precipitate will give a precipitate on heating with ethyl alcohol and sodium hydroxide if MnO_4^- is present. This MnO_2 precipitate will give a bluish green color when tested with nickel sulfate as above. If $Cr_2O_7^{--}$, $Fe(CN)_6^{---}$ or $S_2O_8^{--}$ is present together with MnO_4^-, the MnO_4^- can be removed as MnO_2 by reduction with sodium hydroxide plus ethyl alcohol. If then the filtrate is made acid with acetic acid, treated with nickel sulfate and then with sodium hydroxide, the $Fe(CN)_6^{---}$ is precipitated and the filtrate made acid with acetic acid and treated with *o*-tolidine, a blue color is obtained if $S_2O_8^{--}$ is present. Another portion of the filtrate from the MnO_2 precipitate will give a blue precipitate of Turnbull's blue on addition of ferrous sulfate if ferricyanide is present. Still another portion of the filtrate from the MnO_2 precipitation can be tested for $Cr_2O_7^{--}$ with sulfuric acid and hydrogen peroxide. Based on these reactions colorimetric determinations of these oxidizing agents can be made.—L. M. KUL'BERG. *J. Applied Chem. (U. S. S. R.)*, 10 (1937), 1130–1134 (in French 1134); through *Chem. Abstr.*, 32 (1938), 2868. (F. J. S.)

Permanganate Solution—Standard, Preservation of. If commercial potassium permanganate is boiled with ordinary distilled water, filtered after standing 1 day and kept in a bottle which has been steamed and is kept covered with black paper, it can be kept for at least one year without change in titer. The use of preservative is unnecessary and often causes decomposition.—TAKIO KATÔ. *Science Repts. Tôhoku Imp. Univ., First Ser.*, 26 (1937), 297; through *Chem. Abstr.*, 32 (1938), 2863. (F. J. S.)

Persulfates and Bromates—Iodometric Determination of Small Quantities of, in the Same Solution. Since potassium iodide does not react with bromates in a neutral solution, L. titrates the persulfates in a neutral solution (Zombory method), acidifies the solution and titrates the bromates according to the Kolthoff method. To 20 cc. of a solution containing both persulfates and bromates L. adds 2 Gm. of potassium chloride and 1 Gm of potassium iodide, keeps the solution in the dark for one hour in a vessel sealed with a ground-glass stopper, and titrates the liberated iodine with 0.01*N* sodium thiosulfate. After the titration, he adds 5 cc. of 4.8*N* hydrochloric acid solution to the solution, a few drops of *N* ammonium molybdate solution, and titrates immediately the liberated iodine with 0.01*N* sodium thiosulfate. In the range of 0.5–10 mg. the determinations made upon a mixture of persulfates and bromates were as good as determinations made upon persulfates and bromates dissolved in separate solutions.—F. LÁSKA. *Chem. Listy*, 31 (1937), 404; through *Chem. Abstr.*, 32 (1938), 3293. (F. J. S.)

p_H Measurements in the Oil, Soap and Cosmetic Industries. Various types of colorimetric and electropotentiometric instruments (including the Jonograph, Jonometer and Lyoskop) suitable for rough or accurate laboratory work, or for factory use, are described.—A. KERSTEN. *Ole, Fette, Wachse*, 2, No. 11 (1937), 14–19; through *J. Soc. Chem. Ind.*, 57 (1938), 548. (E. G. V.)